Health at a Glance: Europe 2022

STATE OF HEALTH IN THE EU CYCLE

OECD

European Commission

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Please cite this publication as:
OECD/European Union (2022), *Health at a Glance: Europe 2022: State of Health in the EU Cycle*, OECD Publishing, Paris, https://doi.org/10.1787/507433b0-en.

ISBN 978-92-64-46211-3 (print)
ISBN 978-92-64-67515-5 (pdf)
ISBN 978-92-64-80674-0 (HTML)
ISBN 978-92-64-79766-6 (epub)

Health at a Glance: Europe
ISSN 2305-607X (print)
ISSN 2305-6088 (online)

European Union
ISBN 978-92-76-58684-5 (pdf)
ISBN 978-92-76-58683-8 (print)
Catalogue number: EW-09-22-607-EN-N (pdf)
Catalogue number: EW-09-22-607-EN-C (print)

Photo credits: Cover © Ground Picture/Shutterstock.com; and Arrow illustration © baselinearts.co.uk.

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Foreword

The last two years have seen multiple crises considerably impacting citizens' physical and mental health, as well as posing a significant threat to the global economy and societal well-being. As EU and OECD economies gradually recover from the critical phase of the COVID-19 pandemic, their economic and social outlooks have become more uncertain following Russia's war of aggression against Ukraine. Major hikes in energy and commodity prices have aggravated inflationary pressures at a time when a cost-of-living crisis was already taking a heavy toll on economies and societies everywhere, and especially low-income households.

It is in this uncertain geopolitical, economic and public health environment that we are releasing this 2022 edition of *Health at a Glance: Europe*, a visible output of the continued strong collaboration between the European Commission and the OECD. Promoting better public health and stronger health systems in Europe and around the world remain strategic priorities for both the European Commission and OECD. Moreover, for the first time, this edition of *Health at a Glance: Europe* reports key indicators of health and health systems for Ukraine and Moldova. The focus of this edition is on:

- Strengthening the resilience of health systems, crisis preparedness and response capacity through targeted investments;
- Promoting better prevention and treatment of cancer and other non-communicable diseases;
- Preventing and addressing mental health challenges in the aftermath of the pandemic and in the current context of multiple crises;
- Supporting the digital transformation of health systems to make the most out of health data and new digital tools; and
- Recognising the importance of regional, national, European and broader international efforts to address global public health threats.

Strengthening health system resilience

The pandemic has exposed weaknesses and vulnerabilities in health systems created by years of underfunding across the board, as well as the inadequacy of planning and co-ordination mechanisms for developing effective responses to cross-border public health emergencies. In response, and building on the experiences of the COVID-19 pandemic, the European Commission and Member States have begun the process of building a strong *European Health Union.* This includes an ambitious package of measures aimed at providing the EU with better instruments for detecting and responding to future infectious disease outbreaks, which is underpinned by a new EU health security framework to manage serious cross-border health threats.

The OECD has highlighted the urgent need for smart investments in health systems to protect people's health, strengthen the foundations of health systems, and empower health professionals working on the frontline. According to OECD estimates, the costs of deploying these necessary investments in prevention, health workforce and health system digitisation would amount to around 1.4% of pre-pandemic GDP, on average across OECD countries. Targeted spending must be combined with effective prevention interventions and measures to reduce wasteful spending to ensure that health systems remain fiscally sustainable in the medium to long term.

The *Recovery and Resilience Facility* is the EU's direct response to the COVID-19 crisis, which focuses on accelerating the green and digital transitions as well as building health system resilience. To date, EUR 40 billion have been set aside in EU Member States' Recovery and Resilience Plans to support health investments and reforms. In parallel, the ambitious and standalone *EU4Health* programme will fund actions aimed at building stronger and more sustainable health care systems that deliver better care for EU patients.

Promoting better prevention and management of non-communicable diseases

We cannot allow the pandemic to distract us from the fact that non-communicable diseases (NCDs) continue to account for 80% of the overall burden of disease in Europe. In February 2021, the European Commission launched *Europe's Beating Cancer Plan*, setting out a new EU approach to cancer prevention and treatment. The plan is designed to address the entire disease pathway, from prevention to quality of life of cancer patients and survivors, focusing on actions where the EU can add the most value for patients and their families. In this context, the OECD is collaborating closely with the European Commission to launch the *Cancer Inequalities Registry*, a flagship initiative of the *Europe's Beating Cancer Plan* to monitor trends and inequalities in cancer prevention and care throughout Europe.

Maximising people's health and minimising the burden of NCDs are critical to mitigating the effects of any health crisis. During the acute phase of the pandemic, people with chronic conditions were more vulnerable to complications and more likely to die from COVID-19, while they also experienced disruptions in ongoing care.

In June 2022, the European Commission presented the *Healthier Together* initiative to address other major NCDs in the EU, such as cardiovascular diseases, diabetes and respiratory diseases, as well as mental health and neurological disorders. Tackling these conditions requires both greater prevention and improved disease management. Historically, there has been an under-investment in prevention – OECD data shows that only about 3% of health spending on average in EU and OECD countries were allocated to prevention activities before the pandemic. The OECD has for many years made the economic case for investing in disease prevention and tackling risk factors, and it is encouraging that as much of 20% of the *EU4Health* programme budget is allocated to health promotion and disease prevention. The OECD is also working with countries to more systematically measure the experiences and outcomes of people with chronic conditions in primary care through the Patient-Reported Indicators Surveys (PaRIS).

Together, EU Member States and OECD countries can reduce the burden of cancer and other NCDs and strive to achieve the UN Sustainable Development Goals (SDGs) and in particular SDG 3.4 which aims to reduce NCD-related premature mortality by one-third by 2030.

Improving mental health

Anxiety and depression have significantly increased in all EU countries during the pandemic, affecting young people especially young women and those facing financial difficulties. Symptoms of anxiety and depression amongst young people more than doubled in several European countries during the pandemic. Disruptions in, and growing demand for, mental health support have challenged already-stretched mental health care services, resulting in nearly half of all young Europeans reporting unmet needs for mental health care in the spring of 2022.

We need to take better care of each other, across all generations. This edition of *Health at a Glance: Europe* makes a strong case for taking bold actions to respond to the mental health needs of young people and ensure the pandemic does not leave permanent scars on the aspirations and outcomes of the new generation. Following the call of the President of the European Commission Ursula von der Leyen in her 2022 State of the Union address for a more comprehensive approach to mental health for the EU, the European Commission has started necessary preparatory work so that we are well equipped to tackle this multifaceted challenge. OECD work setting a new benchmark for mental health systems highlights critical areas where better evidence needs to be developed and new effective mental health strategies put in place. The OECD Council Recommendation on Integrated Mental Health, Skills and Work Policy calls for governments to promote the provision of early and fully integrated services to improve the social and labour market outcomes of people with mental health issues.

Supporting the digital transformation of health systems

We don't know when the next crisis will be, but we know that better data and greater use of digital tools in the health sector will be vital to prepare for future shocks. The COVID-19 pandemic has highlighted the need to improve the timeliness of health data to provide the right information to the right people at the right time. To unleash the full potential of health data, in May 2022 the European Commission proposed a regulation to set up a *European Health Data Space*. Under this framework, citizens' control of their own health data will be strengthened, and the secure use of health data for purposes of research, innovation, policy making and regulatory activities will be enabled. Likewise, the 2017 OECD Council Recommendation on Health Data Governance laid out a framework to encourage greater availability of timely health data within countries and across borders, while ensuring the protection of patients' privacy and the security of sensitive data. The OECD is supporting countries' progress to implement national Health Data Governance frameworks.

New digital technologies, such as teleconsultations and other forms of telemedicine, have already transformed people's experiences of health care. The number of teleconsultations with doctors nearly doubled during the first year of the pandemic, and will undoubtedly play a crucial role in making health services more accessible also in the future.

Strengthening national, European and global efforts to prepare for future health threats

The pandemic has clearly highlighted that health is the foundation upon which resilient, productive and fair economies and societies are built. However, emerging pathogens, climate change and other public threats know no borders. To secure the health of all people, we must tackle health globally. The new EU Global Health Strategy is fully aligned with the OECD strategic objective of improving health systems to more effectively prevent and respond to global health threats, as well as combat infectious and non-communicable diseases. The European Commission and the OECD will continue to work with the WHO and other partners to promote robust actions to secure the health of people in Europe and around the world – actions rooted in the universal values of inclusive growth and equal opportunities for all, human rights and co-operation.

Mathias Cormann,

OECD Secretary-General

Stella Kyriakides,

European Commissioner for Health and Food Safety

Acknowledgements

Health at a Glance: Europe 2022 marks the start of a new *State of Health in the EU* cycle – an initiative launched by the European Commission, in co-operation with the OECD and the European Observatory on Health Systems and Policies, to assist EU Member States in improving the health of their citizens and the performance of their health systems. While the preparation of this publication was led by the OECD, the European Commission provided guidance and substantive inputs throughout the process, as well as financial support via the *EU4Health* Programme.

This publication would not have been possible without the efforts of national data correspondents from the 38 countries covered in this report who have provided most of the data and metadata. We are also grateful to all the national officials who have provided helpful comments on a draft of this report.

This report was prepared by a team from the OECD Health Division under the co-ordination of Gaétan Lafortune. Chapter 1 on the impact of the pandemic on young people's health was prepared by Doron Wijker and Eileen Rocard. Chapter 2 on the disruptions of health services during the pandemic for non-COVID patients was prepared by Lucie Bryndová and Noémie Levy. Eileen Rocard prepared Chapter 3 on the health status of populations. Chapter 4 on risk factors was prepared by Marion Devaux and Noémie Levy, with input from Joao Matias from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) for the indicator on illicit drug consumption among adults. Caroline Penn, Michael Mueller and David Morgan prepared Chapter 5 on health expenditure and financing. Chapter 6 on effectiveness and quality of care was prepared by Rie Fujisawa, Kadri-Ann Kallas, Kate de Bienassis, Eliana Barrenho, Anamaria Verdugo, Constanza Salas Ramos, Candan Kendir and Noémie Levy. Chapter 7 on accessibility was prepared by Gaétan Lafortune, Michael Mueller, Gaëlle Balestat, Marie-Clémence Canaud, Noémie Levy and Caroline Berchet, with input from Sarah Thomson and Jorge Alejandro Garcia on behalf of the WHO Barcelona Office for Health Systems Strengthening for the indicator on the financial burden of out-of-pocket spending. Chapter 8 on resilience was prepared by Philip Haywood, Hansol Min, David Morgan and Gaëlle Balestat.

This publication benefited from useful comments from Francesca Colombo and Frederico Guanais from the OECD Health Division. Many useful comments were also received from Maya Matthews, Dirk Van den Steen and Federico Pratellesi from the State of Health, European Semester and Health Technology Assessment unit in the European Commission's Health and Food Safety Directorate General.

Editorial assistance was provided by Marie-Clémence Canaud, Lucy Hulett and Alastair Wood from the OECD Health Division.

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Readers' guide

Health at a Glance: Europe is the first step in the *State of Health in the EU* cycle of knowledge brokering. It is designed to provide a cross-country assessment of national health systems' performance in the European Union. It also provides more in-depth analysis on two important topics in the thematic chapters upfront.

The publication is divided in two parts. Part I contains the two thematic chapters. In this edition, Chapter 1 focuses on the impact of the pandemic on young people's health, including both their mental health and physical health. It notes that EU countries have implemented a range of measures to protect and care for young people's mental and physical health, but also highlights that the magnitude of the impact warrants further actions to ensure the pandemic does not leave permanent scars on the aspirations, opportunities and outcomes of a generation of young people. Chapter 2 reviews the impact that the pandemic has had on disrupting a wide range of health services for non-COVID patients and the consequences of these disruptions. It synthesises a large amount of evidence about the impact of disruptions in primary care services, mental health care, cancer care, chronic care, and elective surgery, and describes and assesses some of the main strategies that EU countries have used to mitigate the impact of these disruptions on access to care for the population, while noting that some backlogs still persist and need to be addressed.

Part II includes six chapters that provide an overview of key indicators of health and health systems across EU member states, candidate countries, European Free Trade Association countries and the United Kingdom. Chapters 3 and 4 describe the health status of the population and some of the main risk factors to health. Chapter 5 reviews the most recent trends in health spending, including the first impacts of the pandemic on health expenditure per capita and as a share of GDP, as well as the mix in public and private financing. The last three chapters are structured around the three objectives set out in the 2014 European Commission Communication on effective, accessible and resilient health systems (https://ec.europa.eu/health/sites/health/files/systems_performance_assessment/docs/com2014_215_final_en.pdf). The selection of indicators in all chapters is based largely on the European Core Health Indicators (ECHI) shortlist (https://ec.europa.eu/health/indicators/echi/list_en). For the first time, this edition of *Health at a Glance: Europe* covers the two new candidate countries to the EU (Moldova and Ukraine). However, the coverage of these two new candidate countries is limited as it stands to those indicators for which comparable data are readily available. As these two new candidate countries become more integrated into the European data collection system, the next editions of *Health at a Glance: Europe* should be able to compare them for a broader set of indicators.

The data presented in this publication come mainly from official national statistics, and have been collected in many cases through the administration of joint questionnaires by the OECD, Eurostat and WHO. The data have been validated by the three organisations to ensure that they meet high standards of data quality and comparability. Some data also come from European surveys co-ordinated by Eurostat, notably the European Union Statistics on Income and Living Conditions Survey (EU-SILC) and the second wave of the European Health Interview Survey (EHIS), as well as from the European Centre for Disease Prevention and Control (ECDC), the World Health Organization (WHO) and other sources.

Presentation of indicators and calculation of EU averages

With the exception of the first two thematic chapters, all indicators in the rest of the publication are presented in the following way. The text provides a brief commentary highlighting the key findings conveyed by the data, defines the indicator and signals any significant data comparability limitation. This is accompanied by a set of figures that typically show current levels of the indicator and, where possible, trends over time.

The EU averages include only EU member states and are calculated either as population-weighted averages (to be consistent with the averages that are calculated by Eurostat) or as unweighted averages (when these averages are calculated by the OECD or other organisations). The calculation method is generally mentioned in a footnote under each figure. By definition, a weighted average gives more weight to the most populated countries and can be interpreted as a comparison with the EU as a whole. An unweighted average gives equal weight to all countries regardless of their population size and can be interpreted as a measure of comparison with other countries.

Population data

The population data used to calculate rates per capita and population-weighted averages come from the Eurostat demographics database. The data relate to mid-year estimates (calculated as the average between the beginning and the end of the year). Population estimates are subject to revision, so they may differ from the latest population figures released by Eurostat or national statistical offices.

Data limitations

Limitations in data comparability are indicated both in the text (in the box related to “Definition and comparability”) as well as in footnotes underneath the figures.

Data sources

Readers interested in using the data presented in this publication for further analysis and research are encouraged to consult the full documentation of definitions, sources and methods contained in *OECD Health Statistics* for all OECD member countries, including 22 EU member states and five additional countries (Iceland, Norway, Switzerland, Türkiye and the United Kingdom). This information is available in OECD.Stat (https://oe.cd/ds/health-statistics). For the other countries, readers are invited to consult the Eurostat database for more information on sources and methods (http://ec.europa.eu/eurostat/data/database) or the data sources mentioned underneath the figures.

Readers interested in an interactive presentation of the European Core Health Indicators (ECHI) can consult DG SANTE’s ECHI data tool at https://webgate.ec.europa.eu/dyna/echi/.

Executive summary

The pandemic has had a dramatic impact on people's lives in Europe and around the world. It has led to a reduction of more than one year in life expectancy in the EU in 2021 compared with the pre-pandemic level – the largest drop observed in most EU countries since World War II. By the end of October 2022, more than 1.1 million COVID-19 deaths had been reported across the 27 EU countries. This is however an under-estimation, with excess mortality statistics pointing to an additional 300 000 people dying as a direct or indirect result of the pandemic. Over 90% of COVID-19 deaths have occurred among people over the age of 60. The mortality impact of COVID-19 has been lowest in the Nordic countries (Iceland, Norway, Denmark and Finland), and highest in Central and Eastern European countries (Bulgaria, Hungary, Croatia, Czech Republic, Slovenia, Latvia and Romania).

Many factors explain cross-country differences in COVID-19 mortality, including the pre-existing health conditions and vulnerabilities of the population before COVID-19, the timing and effectiveness of containment strategies, the take-up of COVID-19 vaccination, and differences in the capacity of health systems to respond effectively to the unprecedented challenges imposed by COVID-19.

The pandemic has had a major impact on the mental and physical health of young people

Although the pandemic has had an impact on nearly everyone's life, there have been particular concerns about the mental and physical health of the millions of young Europeans whose formative years have been marked by disruptions in their education and social activities. In several European countries such as Belgium, Estonia, France, Sweden and Norway, the share of young people reporting symptoms of depression more than doubled during the pandemic, reaching prevalence levels at least twice as high as in older age groups. Many children and young people also spent considerably less time engaging in physical activity and had worsening nutrition habits, with indications of a rise in child overweight and obesity in some countries.

The growing demand for mental health support, combined with disruptions in care delivery during the pandemic, challenged already-stretched mental health services. About 50% of young Europeans reported unmet needs for mental health care in spring 2021 and again in spring 2022. Many countries have implemented some measures to protect and care for young people's mental health, yet the magnitude of the impact warrants further action to ensure the pandemic does not leave permanent scars on this generation.

Care disruption during the pandemic created a backlog of patients for cancer care and elective surgery

The pandemic also disrupted the provision of primary care, cancer screening and treatment, care continuity for people with chronic conditions, and elective (non-urgent) surgery, especially during times when confinement measures were in place. During the first months of the pandemic in spring 2020, disruptions in cancer screening programmes and specialist consultations resulted in cancer patients being diagnosed at a later stage. Many countries were able to offset some of the initial reductions in cancer screening by scaling up activities in the second half of the year. However, screening rates for breast and cervical cancer still fell by 6% on average in EU countries in 2020. Delays in cancer screening can lead to many cancer patients being diagnosed at more advanced stages, making their treatment more complex and reducing their chances of survival.

Elective surgical procedures were also halted, creating a backlog of patients awaiting these interventions. In 2020, 2 million fewer elective surgical procedures (such as cataract surgery, and hip and knee replacements) were performed than in 2019 across EU countries – a decrease of one-sixth compared to pre-pandemic volumes. These "missing volumes" of operations have increased waiting times for patients in need of surgery, increasing patient dissatisfaction. Many EU countries have provided additional funding to address these backlogs, but the main constraint to scaling up volumes of procedures has been shortages of health workers. Incentives were provided for staff to work longer hours, but these clearly had limits and ran the risk of leading to burnout and resignation.

On a more positive note, the rapid development of teleconsultations in early 2020 helped to maintain access to care, in particular for patients with chronic conditions. Although it is encouraging that the vast majority of people who used telemedicine expressed high satisfaction, there are nevertheless concerns that some teleconsultations provide little benefit and that teleconsultations pose risks of widening health inequalities through digital exclusion for older, poorer people and those living in rural areas.

EU countries generally recognised the need to boost resources to respond to the pandemic. Despite a significant reduction in GDP, per-capita health expenditure increased by over 5% on average across EU countries in 2020, and by over 10% in Bulgaria, the Czech Republic and Hungary. However, several of the weaknesses and vulnerabilities identified during the pandemic remain – most notably the widespread shortage of health workers. According to recent OECD estimates, about half of all the new investments required to make health systems more resilient should be devoted to increasing both recruitment and retention of health workers through improved working conditions.

Prioritising the prevention of infectious and non-communicable diseases

Despite much talk of health spending being an investment rather than a cost, policy approaches had not changed significantly before the pandemic. Health spending remained overwhelmingly focused on curative care, with only 3% of total health spending going toward prevention on average. In 2020, most EU countries substantially increased their spending on prevention, at least temporarily, to fund testing, tracing, surveillance and public information campaigns related to the pandemic. In 2021, large additional resources were allocated to the roll-out of COVID-19 vaccination campaigns. The rapid deployment of vaccines was an important contributor to the management of the pandemic: vaccinations were estimated to have prevented over 250 000 deaths across the EU only in 2021, although vaccination rates among vulnerable groups remained quite low in some countries.

During the pandemic, many European countries also made substantial progress in vaccinating vulnerable groups against seasonal flu, with the proportion of people aged over 65 vaccinated increasing by over 10 percentage points in several countries. Despite some temporary challenges in 2021, most European countries were also able to maintain childhood vaccination programmes.

One of the lessons from the pandemic is that maximising people's health and minimising their exposure to risk factors before a crisis is critical. Obesity and chronic conditions, such as diabetes and respiratory problems, were important risk factors for serious complications and death from COVID-19. The prevention of behavioural and environmental risk factors can go a long way to improving people's health and reducing the prevalence of chronic diseases and deaths. Despite progress in reducing smoking rates over the last decades, tobacco consumption remains the largest behavioural risk factor to health, still accounting for about 780 000 deaths per year in the EU. Alcohol consumption has also been declining over the past decade, but harmful alcohol use is still responsible for nearly 300 000 deaths per year in the EU.

Environmental factors, such as air pollution and climate change, also have serious consequences on people's health and mortality. It is estimated that over 300 000 people in the EU died due to air pollution from fine particulate matters alone in 2019, although this number has fallen in most countries as emissions are declining and air quality is improving.

Monitoring and improving the *State of Health in the EU*

Health at a Glance: Europe 2022 is the result of ongoing close collaboration between the OECD and the European Commission to improve country-specific and EU-wide knowledge on health issues as part of the Commission's *State of Health in the EU* cycle.

In 2016, the European Commission launched the *State of Health in the EU* cycle to assist EU Member States in improving the health of their citizens and the performance of their health systems. *Health at a Glance: Europe* is the first product of the two-year cycle, presenting every even-numbered year extensive data and comparative analyses that can be used to identify both the strengths and the opportunities for improvement in health and health systems.

The second step in the cycle is the *Country Health Profiles* for all EU countries. The next edition of these profiles will be published in 2023 jointly with the *European Observatory on Health Systems and Policies*, and will highlight the particular characteristics and challenges of each country's health system. During the whole cycle, a series of *Voluntary Exchanges* with Member States will take place to discuss some of the health challenges they face and potential policy responses in greater detail.

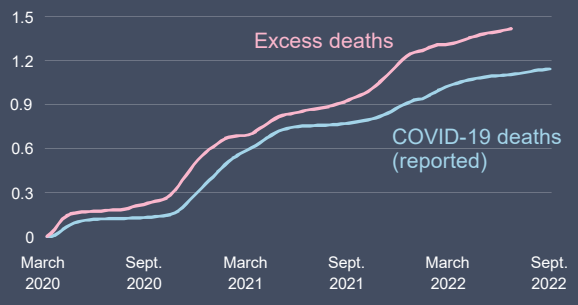
For more information, please consult: https://health.ec.europa.eu/state-health-eu_en.

Key facts and figures

The severe human cost of COVID-19

Over 1.1 million people in the EU have died from COVID-19 since the beginning of the pandemic, and excess mortality has been even higher.

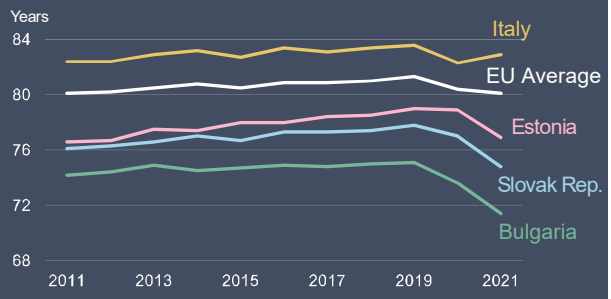
Cumulative number of deaths across EU countries, millions



Source: ECDC (COVID-19 deaths) and OECD based on Eurostat (excess deaths)

COVID-19 has reduced life expectancy in almost all European countries

Between 2019 and 2021, life expectancy in the EU fell by more than a year, reaching levels last seen a decade ago. Some countries experienced even larger declines.

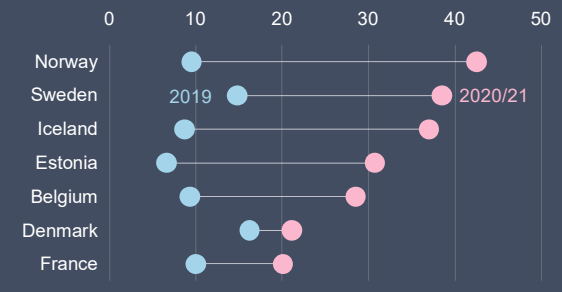


Source: Eurostat

The pandemic had a major impact on young people's mental health

The rate of depressive symptoms among young people (18-29) more than doubled in several countries.

% of young people with depressive symptoms, 2019 vs 2020/21

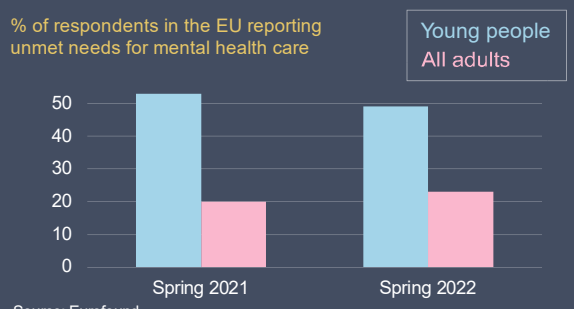


Source: National surveys, see Figure 1.1 for methodology

Too many young people are not receiving the mental health support they need

Around half of young people (18-29) in the EU reported unmet needs for mental health care services in spring 2021 and spring 2022, more than double the share for all adults.

% of respondents in the EU reporting unmet needs for mental health care



Source: Eurofound

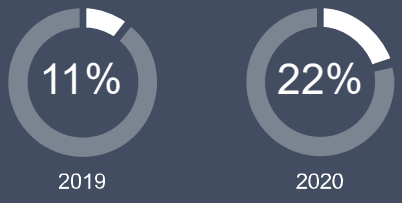
The pandemic has disrupted health services for non-COVID patients

The number of surgical procedures across EU countries was 16% lower in 2020 compared to 2019 (i.e. 1 in 6 people didn't get surgery). These missing interventions have contributed to longer waiting times.

Source: OECD Health Statistics 2022

Teleconsultations helped offset the drop of in-person visits to the doctor

The share of teleconsultations doubled during the first year of the COVID-19 pandemic, from 11% in 2019 to 22% in 2020 (on average across EU countries).



Source: Health at a Glance: Europe 2022

Part I Thematic chapters on public health issues

1 Coping with COVID-19: Young people's health in an age of disruption

While few people's lives have been unaffected by the COVID-19 pandemic, there have been concerns for the physical and mental health of young Europeans whose formative years have been marked by fear, uncertainty and disruption – particularly given the critical importance of early experiences in shaping health and well-being later in life. This chapter finds that those concerns are well-founded. The pandemic had a significant impact on young people's physical and mental health, with symptoms of depression amongst young people more than doubling in several countries, young people spending considerably less time engaged in physical activity, and many experiencing a worsening of their nutrition habits. Disruptions to care delivery and growing demand have also challenged already-stretched mental health services. Almost one in two young Europeans reported unmet needs for mental health care during the pandemic. European countries have implemented a range of measures to support young people's physical and mental health, but given the magnitude of the impacts, further action is needed.

1.1. Introduction

The pandemic and the measures implemented to contain it have had wide-reaching implications for young people's physical and mental health. Beyond the direct health impacts of the pandemic, fear, uncertainty, prolonged periods of social isolation and disruptions to education and employment seriously disrupted the lives and routines of young people at a critical time of their physical and social development. The alarm over mental health was sounded early and often. The pandemic exacerbated many of the risk factors associated with poor mental health and weakened many of the protective factors, leading to an unprecedented worsening of population mental health, particularly amongst young people (OECD, 2021[1]). School closures, social isolation, disrupted routines and the suspension of sports programmes also had considerable implications for young people's physical health, with young people engaging in less physical activity and many experiencing a worsening of dietary habits.

Recognising the far-reaching consequences of the pandemic and the measures implemented to contain it, this chapter provides an overview of the impact of the COVID-19 crisis on young people's mental health, physical activity and nutrition, and the measures implemented across Europe to mitigate those impacts. It begins with a review of the evidence on the impact of the pandemic and associated containment measures on youth mental health and mental health care services, and then provides an overview of the policy measures adopted by European countries to mitigate them. It then reviews evidence on the impacts of the pandemic on young people's physical activity and nutrition, and consequences on overweight and obesity. This chapter focuses primarily on school-aged children and adolescents, and on young people aged up to 29 years old.

1.2. The pandemic has had a significant impact on young people's mental health and well-being

1.2.1. Symptoms of depression more than doubled in several European countries

Even before the pandemic, the burden of mental ill-health amongst young Europeans was significant. The prevalence of mental health issues is difficult to estimate as data obtained via population surveys often focus on a few specific mental health conditions or on the prevalence of conditions amongst specific age groups. Nevertheless, available evidence suggests mental health issues affect millions of young people across Europe every year. According to estimates from the Institute for Health Metrics and Evaluation (IHME), more than one in six young people in the EU – more than 14 million people – had a mental health issue in 2019 (17.4% of those aged 15-29 on average) (IHME, 2020[2]).

Box 1.1. Defining and measuring the mental health of young people

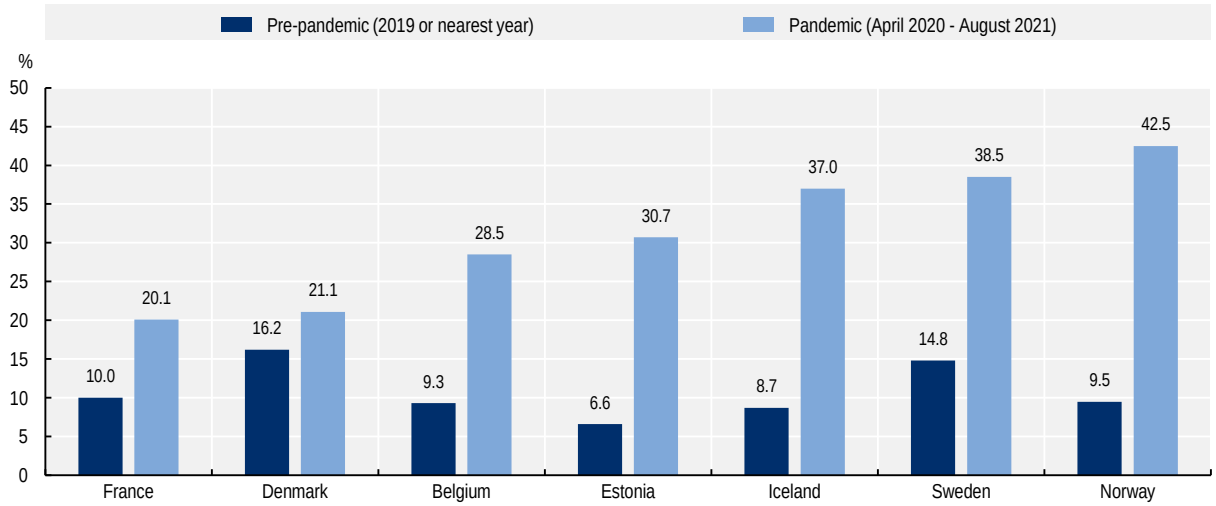
The terms "mental health conditions" and "mental health issues" are used in this brief, while the term "mental illness" is largely avoided. This is to ensure, where possible, language is person-centred, strengths-based, and recovery-focused, and reflects the differing experiences of mental health issues from individual to individual.

Age-stratified data on population mental health remain limited in quality and coverage, especially over the course of the pandemic. This chapter relies primarily on estimates of the prevalence of symptoms of anxiety and depression, obtained via self-reported surveys, as a proxy indicator for mental health. As far as possible, this chapter reports on data obtained through surveys using validated instruments, such as General Anxiety Disorder-7 (GAD-7) for anxiety and the Patient Health Questionnaire-9 (PHQ-9) for depression. A brief overview of the survey instruments referred to regularly in this chapter is contained in Annex 1.A. Samples are not necessarily representative, especially for surveys that were undertaken rapidly during the pandemic. Estimates of the share of people experiencing symptoms of mental health conditions are also affected by self-reporting rates, which can be influenced by different levels of mental health literacy or stigma within countries.

The pandemic and the measures implemented to contain it fuelled an unprecedented worsening of young people's mental health across Europe. In European countries where broadly comparable pre-pandemic data are available, the share of young people (typically 18-29) with symptoms of depression more than doubled in several countries (Figure 1.1). In three Nordic countries – Iceland, Sweden and Norway – more than one in three young people reported symptoms of depression in this period, compared to around one in nine prior to the pandemic (11% on average).

Figure 1.1. Symptoms of depression amongst young people more than doubled in several European countries

Share of young people with symptoms of depression



Note: Given the prevalence of symptoms of depression has fluctuated within countries over the course of the pandemic, prevalence estimates are pooled from longitudinal or repeated cross-sectional surveys within countries up to 12 August 2021. However, not all surveys are representative and the number and timing of surveys has varied across countries which hampers cross-country comparability. Symptoms of depression have been measured using PHQ-8 and PHQ-9 in all countries except France and Estonia. Some pre-pandemic and pandemic data are not strictly comparable due to differences in scoring methods, which could understate the increase in symptoms to some extent. Symptoms of depression in France during the pandemic have been measured using HADS-D which could lead to lower estimates of the share of young people with symptoms of depression compared to other countries using PHQ-8 and PHQ-9. The age groups used to refer to "young people" vary, limiting comparability. Pandemic data are for 18-29 year-olds in all countries except France, where it is for 18-24 year-olds. Pre-pandemic data are for 15-24 year-olds in all countries except Belgium, where it is for 18-29 year-olds.

Source (years and age groups): France: Eurostat (2021[3]), https://ec.europa.eu/eurostat/databrowser/ (2019, 15-24) and Santé publique France (2022[4]), https://www.santepubliquefrance.fr/etudes-et-enquetes/coviprev-une-enquete-pour-suivre-l-evolution-des-comportements-et-de-la-sante-mentale-pendant-l-epidemie-de-covid-19 (2020/21, 18-24); Belgium: Sciensano (2018[5]), https://www.sciensano.be/en/projects/health-interview-survey and Sciensano (2022[6]), https://datastudio.google.com/embed/reporting/7e11980c-3350-4ee3-8291-3065cc4e90c2/page/ykUGC (2018 and 2020/21, 18-29); Denmark, Estonia, Iceland, Sweden and Norway: Eurostat (2021[3]), https://ec.europa.eu/eurostat/databrowser/ (2019, 15-24) and Unnarsdóttir et al. (2021[7]), https://doi.org/10.1093/ije/dyab234 (2020/21, 18-29).

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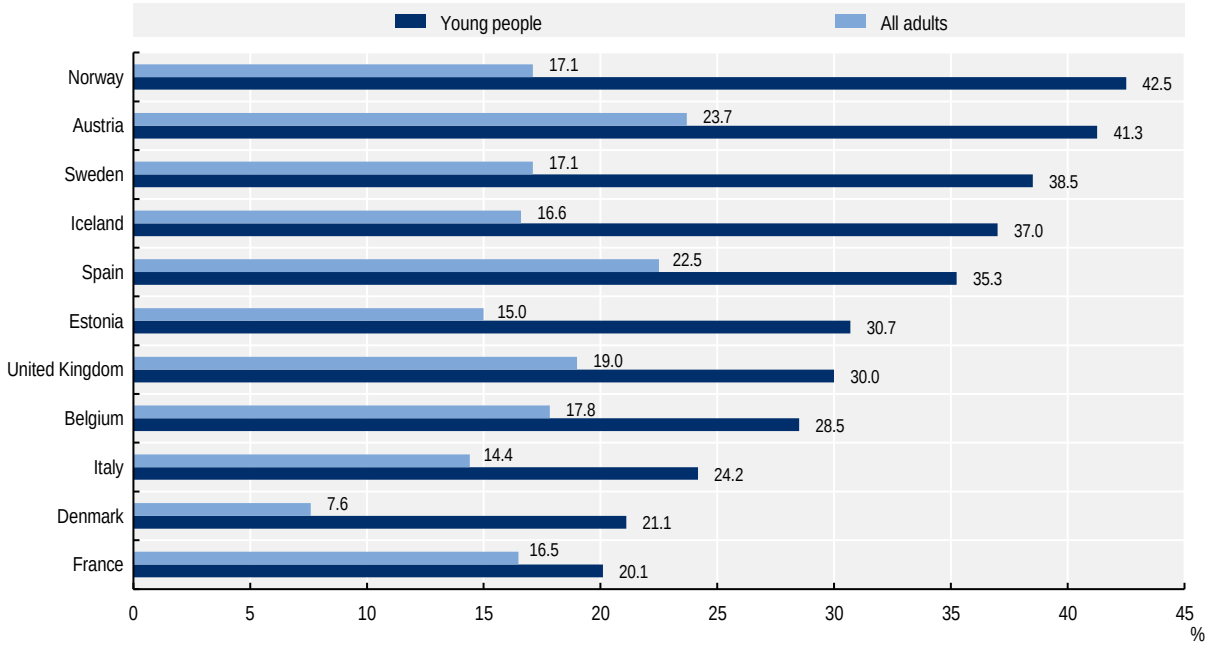
The share of young people with symptoms of anxiety also increased significantly in a number of European countries, in some cases doubling from pre-pandemic levels. For example in Belgium, the share of young people (18-29) reporting symptoms of anxiety more than doubled, climbing from 12% in 2018 to 28% between April 2020 and June 2022 (Sciensano, 2018[5]; Sciensano, 2022[6]). In Finland, the share of students (aged 14-20) reporting moderate or severe symptoms of anxiety increased by more than 50% between 2019 and 2021, from 12.6% to 19.2% (Finnish Institute for Health and Welfare, 2021[8]). Symptoms of anxiety amongst young people have also been extraordinarily high in France, with almost one in three young people aged 18-24 (31%) reporting symptoms of anxiety in the period between March 2020 and September 2022 on average (Santé publique France, 2022[4]).

While there is a paucity of pandemic data for children and adolescents, the available evidence also points to an increase in symptoms of anxiety and depression amongst this age group. Globally, a 2021 meta-analysis of studies reporting on symptoms of anxiety and depression amongst children and adolescents (up to 18 years old) – relying primarily on data collected in 2020 – found that symptoms were double that of pre-pandemic levels, with one in four experiencing symptoms of depression, and one in five experiencing symptoms of anxiety (Racine et al., 2021[9]).

Data from Europe similarly points to a worsening of mental health and well-being amongst children and adolescents, albeit with some variation across countries. In the Netherlands, the share of young people (12-18) considered "mentally unhealthy" (as measured using the Mental Health Inventory-5) increased by 50% during the pandemic, from 8.3% in 2019 to 12.6% in 2021 (CBS Netherlands, 2022[10]). Similarly in Germany, a survey using the Screen for Child Anxiety Related Disorders (SCARED) found that the share of children and adolescents aged 11-17 with symptoms of anxiety more than doubled over the course of the pandemic, from 14.9% prior to the pandemic to 30.1% in December 2020/January 2021 (Ravens-Sieberer et al., 2022[11]). However, in Sweden, a longitudinal study of 15-year-olds found no differences in psychosomatic symptoms and stress between adolescents sampled during the pandemic (between February and November 2020) compared to those sampled just before the pandemic (Chen et al., 2022[12]). Variation in the intensity of the pandemic and the measures implemented to contain it is likely to explain some cross-country variations in mental distress amongst young people. While full school closures occurred in almost all European countries, this was not the case in Sweden and Iceland and the length of closures varied significantly (see Figure 1.12 below).

Figure 1.2. The share of young people with symptoms of depression was more than double that of the population average in several European countries

Share of people with symptoms of depression, 2020-21(or nearest year available)



Note: Data are not strictly comparable across countries as some estimates were collected at different points in time and are based on different survey instruments, but are presented to provide an indication of age gaps within countries. The data used in Figure 1.1 for France, Denmark, Belgium, Estonia, Iceland, Sweden and Norway have also been used in this figure and are therefore subject to the same comparability limitations. Data for the United Kingdom (Great Britain) are pooled averages for January to March 2021 and July to August 2021. Data for Austria are pooled averages for April 2020 and December 2020/January 2021. Data for Spain are for April-May 2020. Data for Italy are for June 2020. Symptoms of depression have been measured using PHQ-8 and PHQ-9 in all countries except France, Estonia and Italy.

Source and age groups (for young people): France: Santé publique France (2022[4]), https://www.santepubliquefrance.fr/etudes-et-enquetes/coviprev-une-enquete-pour-suivre-l-evolution-des-comportements-et-de-la-sante-mentale-pendant-l-epidemie-de-covid-19 (18-24); Belgium: Sciensano (2022[6]) https://datastudio.google.com/embed/reporting/7e11980c-3350-4ee3-8291-3065cc4e90c2/page/ykUGC (18-29); Denmark, Estonia, Iceland, Sweden and Norway: Unnarsdóttir et al. (2021[7]) (18-29); https://doi.org/10.1093/ije/dyab234; United Kingdom (Great Britain): Office for National Statistics (2021[13]), https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/datasets/coronavirusanddepressioninadultsingreatbritain (16-29); Austria: Pieh et al. (2020[14]), https://doi.org/10.1016/j.jpsychores.2020.110186, Dale et al. (2021[15]), https://doi.org/10.3390/ijerph18073679 (18-24); Spain: Jacques-Aviñó et al. (2020[16]), https://doi.org/10.1136/bmjopen-2020-044617 (18-35); Italy: Delmastro and Zamariola (2020[17]), https://doi.org/10.1038/s41598-020-79850-6 (16-24).

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1.2.2. The pandemic had a disproportionate impact on young people's mental health

There is now overwhelming evidence that young people's mental health deteriorated disproportionately over the course of the pandemic. In virtually all European countries for which data are available, young people frequently reported poorer mental health than older age groups. This is a reversal of the pre-pandemic situation: in 2019, the share of young people reporting symptoms of depression was typically lower than the population average (6% of 15-24 year-olds, compared to 7% among all adults on average in the EU) (Eurostat, 2021[3]).This reversal has been significant: during the pandemic, the share of young people reporting symptoms of depression was at least 50% higher than the population average in almost all European countries for which data are available, and in some countries even double that of the population average (Figure 1.2). The pandemic has clearly taken a heavy toll on young people.

1.2.3. Rates of suicidal ideation increased significantly, but there is not yet any indication of an increase in rates of death by suicide amongst young Europeans

The heavy toll of the pandemic on young people's mental health and well-being is further evidenced by an alarming increase in reported rates of suicidal ideation (suicidal thoughts). In Belgium and France, there was around a fivefold increase. In March 2021, one in four young Belgians aged 18-29 (25%) reported that they had seriously considered suicide in the past 12 months, compared to a pre-pandemic rate of around one in nineteen (5.2% in 2018) (Sciensano, 2021[18]; Sciensano, 2018[5]). Similarly in France, in September 2022 more than one in four young people aged 18-24 reported having considered suicide in the past 12 months, compared to a pre-pandemic prevalence of 4.6% in 2017 (Santé publique France, 2022[4]; Baromètre de Santé publique France, 2017[19]). High rates of suicidal ideation have also been reported in the Netherlands, where survey data for the period between April-June 2022 showed that around one in six young people (16% of those aged 12-25) reported serious thoughts of suicide in the past three months (Dutch National Institute for Public Health and the Environment, 2022[20]).

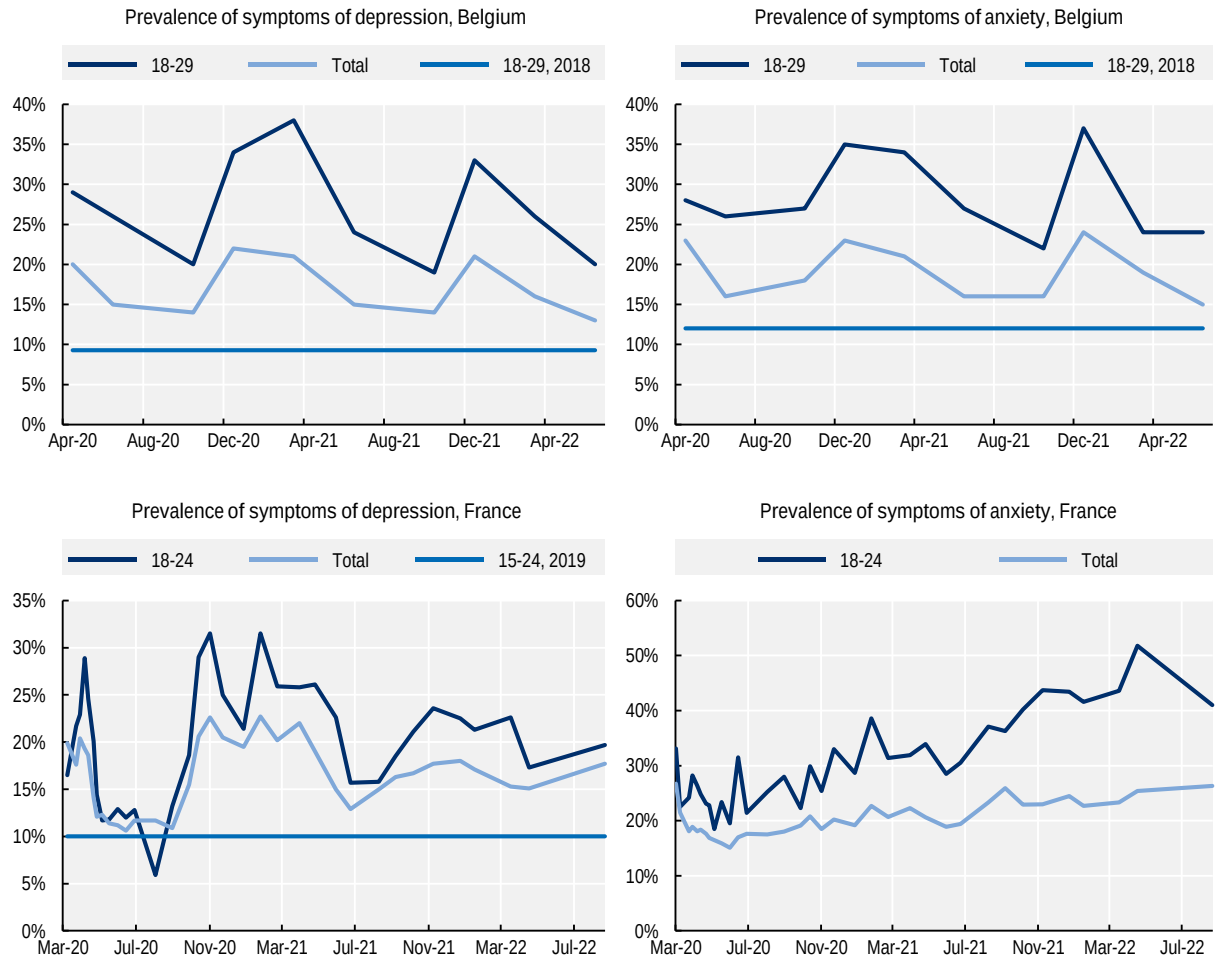
While there is as yet no indication that rates of death by suicide amongst young people have increased across Europe since the start of the pandemic, it is critically important that suicide prevention measures are strengthened and that rates of death by suicide are monitored closely.

1.3. Young people's mental health fluctuated with the intensity of the pandemic and the measures introduced to contain it

1.3.1. Population mental health was typically worst around pandemic "peaks", when infection and death rates were high, and uncertainty loomed large

Population mental health went up and down with pandemic "waves", typically worsening as the pandemic intensified. This is consistent with general population trends: in a number of European countries, high COVID-19 infection and death rates and stringent containment measures have generally been associated with increases in mental distress over the course of the pandemic, though the associations have varied by country and the type of mental health indicator (OECD, forthcoming[21]). In Belgium and France, symptoms of anxiety and depression amongst young people were typically highest around pandemic peaks, though they remained significantly above pre-pandemic levels for almost the entirety of the pandemic (Figure 1.3). In France, symptoms of anxiety amongst young people (18-24) generally increased or remained stable between June 2021 and May 2022, before declining slightly in September 2022 (to 41%). Heightened symptoms of anxiety could to some extent reflect the emergence and confluence of multiple crises, such as Russia's war of aggression against Ukraine, the cost-of-living crisis, and the climate crisis.

Figure 1.3. Symptoms of anxiety and depression were typically highest around pandemic peaks in Belgium and France, but remained well above pre-pandemic levels for almost all of the pandemic



Note: Depression and anxiety have been measured using HADS-D and HADS-A in France and using PHQ-9 (depression) and GAD-7 (anxiety) in Belgium. An overview of the relevant survey methodologies is available in Annex 1.A. Pre-pandemic data for Belgium (2018) and France (2019) is provided where available. A pre-pandemic value for anxiety in France is not available. In France, confinement measures were in place in March-May 2020, November-December 2020, and April 2021. In Belgium, confinement measures were in place in March-May 2020 and from November 2020, with restrictions to June-August 2021.

Source: France: Eurostat (2021[3]), https://ec.europa.eu/eurostat/databrowser/ and Santé publique France (2022[4]), https://ec.europa.eu/eurostat/databrowser/; Belgium: Sciensano (2018[5]), https://www.sciensano.be/en/projects/health-interview-survey, Sciensano (2022[6]), https://datastudio.google.com/embed/reporting/7e11980c-3350-4ee3-8291-3065cc4e90c2/page/ykUGC, OECD/European Observatory on Health Systems and Policies (2021[22]), https://doi.org/10.1787/57e3abb5-en.

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1.3.2. Many young people with pre-existing and severe mental health issues reported a worsening of their symptoms during the pandemic

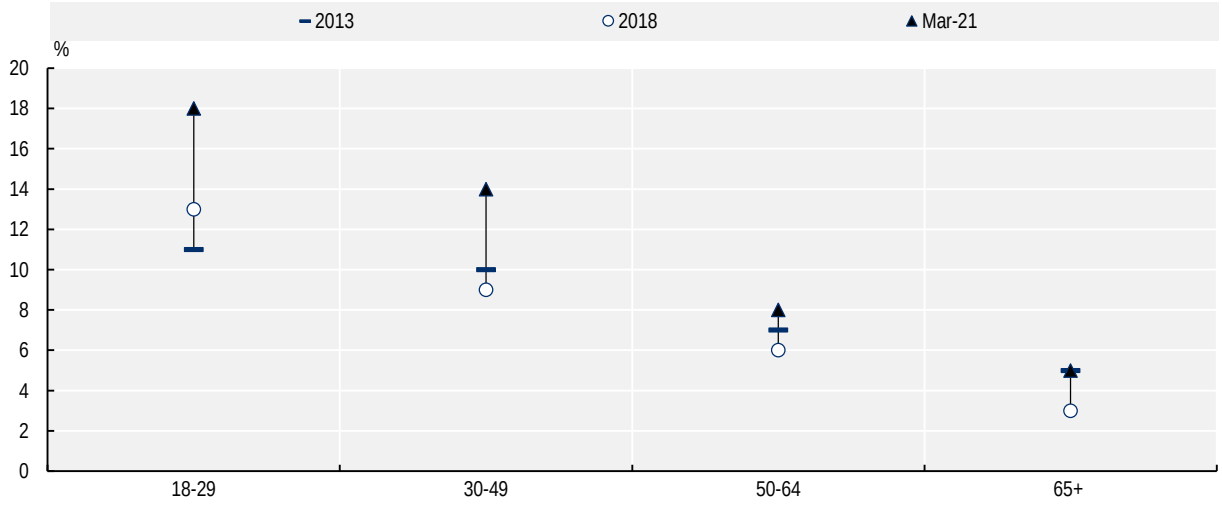
Alongside a sharp increase in the prevalence of mental distress, many young Europeans with pre-existing mental health issues reported a worsening of their mental health and well-being, though the evidence is somewhat mixed and varies across countries. A survey conducted in the United Kingdom (primarily England) between April and June 2020 found that three-quarters of young people with experience of mental health issues reported that their mental health had worsened during the first lockdown (Mind, 2020[23]). Conversely in Denmark, a longitudinal survey of 18-24 year-olds found a deterioration in mental well-being amongst young people without pre-existing symptoms of depression during the first lockdown, but not amongst those with pre-existing symptoms (Joensen et al., 2022[24]).

There is also growing evidence that many young people with specific conditions, such as eating disorders, experienced a worsening of their symptoms. The pandemic – and particularly prolonged and repeated periods of confinement – may have exacerbated eating disorders through heightened mental distress, disrupted routines, reduced access to care and treatment, and restrictions to physical activity (Rodgers et al., 2020[25]).

Some country-specific evidence points not only to a worsening of symptoms but also potentially to an increase in the incidence of eating disorders, though evidence for the latter is mixed. In Belgium, the share of young people aged 18-29 with symptoms of an eating disorder was almost 40% higher in March 2021 than in 2018 (Sciensano, 2021[18]). While the share of young people with symptoms of an eating disorder had already been increasing in the years leading up to the pandemic, this trend accelerated (Figure 1.4). However in Italy, an April-June 2020 survey conducted during and after lockdown found that students with a history of an eating disorder reported an increase in symptoms following lockdowns, but there appeared to be no increase amongst students who did not have a previous history of an eating disorder (Meda et al., 2021[26]).

Figure 1.4. The pandemic accelerated a growth in eating disorders amongst young people in Belgium

Share of people in Belgium with symptoms of an eating disorder by age, 2013-21



Note: Symptoms of an eating disorder were measured using SCOFF, a five-item questionnaire. Each "yes" response equals one point, and a cut-off of ≥2 has been used to indicate symptoms of anorexia, bulimia, or another eating disorder.
Source: Sciensano (2021[18]), "Sixth COVID-19 Health Survey. First results", https://doi.org/10.25608/r4f5-1365.

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1.4. While available data suggest some improvement in early 2022, mental distress remains very high

1.4.1. Young people's mental health appears to have improved in early 2022, but symptoms of anxiety and depression are still double pre-pandemic levels in some countries

A limited set of country-specific evidence suggests that young people's mental health and well-being improved somewhat in the first half of 2022 as infection and death rates fell and restrictions continued to be eased across Europe (see Figure 1.3). At a European level, data from Eurofound's *Living, working and COVID-19 e-survey* point to some improvement in mental well-being, with the share of 18-29 year-olds at risk of depression in spring 2022 declining from spring 2021, but remaining higher than in the spring of 2020 (Eurofound, 2022[27]). However, in Belgium and France, latest data show that symptoms of anxiety and depression remain elevated, and in some cases prevalence is still double that of pre-pandemic levels. In Belgium, in June 2022 the prevalence of symptoms of anxiety and depression amongst 18-29 year-olds stood at 24% and 20% respectively, double the pre-pandemic levels of 12% and 9% (in 2018). In France, data from September 2022 show that the share of 18-24 year-olds with symptoms of depression was also double that of pre-pandemic levels (19.7% compared to 10.0% for 15-24 year-olds in 2019).

It is too early to say what the long-term impact of the pandemic will be on the mental health and well-being of "the COVID-19 generation" – the young people whose formative years have been marked by the pandemic. Elevated mental distress can to some extent be considered an "expected" response to the stresses of the pandemic, and with appropriate support young people may be able to bounce back from the crisis. Yet, what little data there is shows that as of mid-2022, mental health and well-being remains affected. The potential long-term consequences of the pandemic on young people's mental health are concerning, not least of which to young people themselves: in a July/August 2021 OECD survey, 151 youth organisations rated the areas where young people were finding it most challenging to mitigate the effects of the COVID-19 crisis, and mental health was the number one concern (OECD, 2022[28]).

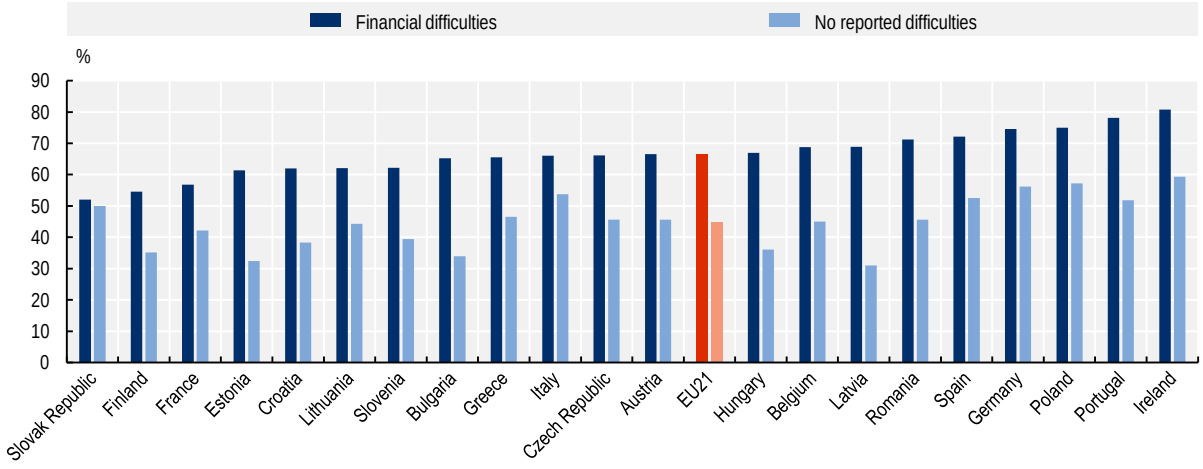
1.4.2. The pandemic has highlighted the links between income, inequality and mental health

The links between income, inequality and mental health were once more brought into sharp relief during the pandemic. Young people's exposure to the health, social and economic shocks of the pandemic – and their ability to buffer those shocks – was shaped by their background and resources. While the risk of poor mental health has always had a social gradient, this trend has persisted or widened over the course of the pandemic. Young people in precarious financial circumstances, young women, and young people at risk of exclusion (by sexual orientation, migration status and race/ethnicity) were at heightened risk of mental health issues over the course of the pandemic.

Low income has long been associated with an increased risk of poor mental health, and this trend has continued during the COVID-19 pandemic. Data from Eurofound's *Living, working and COVID-19 e-survey* found that young people aged 18-29 who perceived their household to have financial difficulties were significantly more likely to be at risk of depression over the course of the pandemic (Figure 1.5). On average across countries, two-thirds of young people who reported financial difficulties could be considered to be at risk of depression during the pandemic (67%), compared to just under half (45%) of those who did not report financial difficulties.

Figure 1.5. Young people in precarious financial circumstances were at heightened risk of depression over the course of the pandemic

Share of young people aged 18-29 at risk of depression (WHO-5 score <50 out of 100), by self-perceived difficulty to make ends meet, 2020-21



Note: Data from the first, second and third waves of Eurofound's *Living, working and COVID-19 e-survey,* conducted in spring 2020, summer 2020 and spring 2021, have been pooled (weighted averages are presented). The share of respondents reporting financial difficulties are those who responded that their households had "difficulty" or "great difficulty" making ends meet. Data for Cyprus, Denmark, Luxembourg, Malta, the Netherlands and Sweden have been excluded due to small sample sizes.

Source: OECD calculations, based on Eurofound (2021[29]), *Living, working and COVID-19 dataset*, http://eurofound.link/covid19data.

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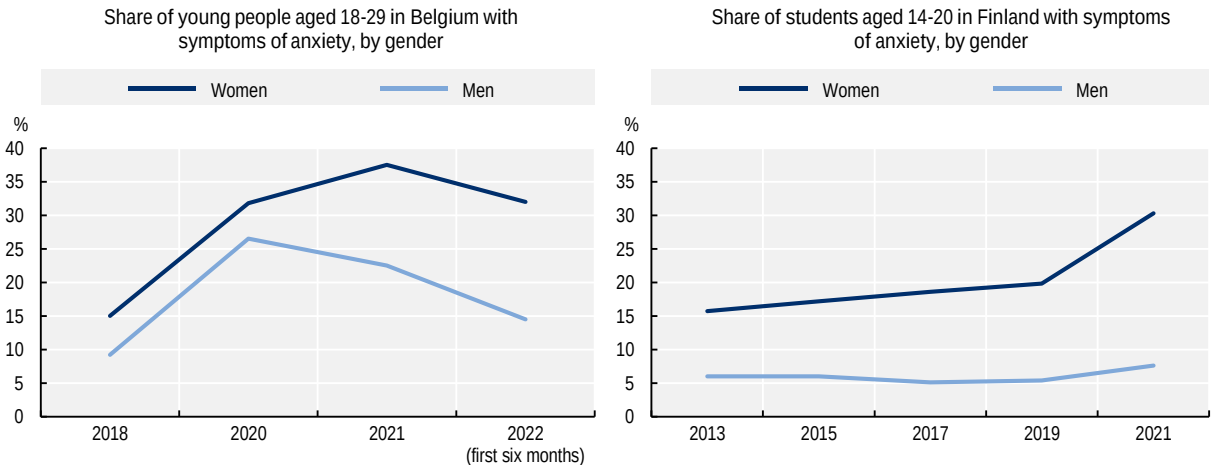
Young people at risk of exclusion were also at heightened risk of mental health issues. In the United Kingdom, LGBTIQ+ young people were more likely to report symptoms of anxiety and depression, findings echoed in Belgium (albeit amongst adults) where survey research suggests that the pandemic exacerbated mental health disparities by sexual orientation (Just Like Us, 2021[30]; Reyniers et al., 2022[31]);. A survey of under-18s in the United Kingdom found that ethnic minority young people were significantly more likely to report symptoms of anxiety or depression and have suicidal thoughts than their white counterparts (Kooth, 2021[32]). Survey data from Austria suggests that migration status has also been a risk factor for poorer mental health over the course of the pandemic, at least in some countries. In Austria, high school students with a first or second-generation migration background were more likely to report symptoms of anxiety and depression in February 2021 than those with no migration background (Pieh et al., 2022[33]).

Inequalities in mental health by gender have also persisted – and in some cases widened – over the course of the pandemic. Young women were more likely to report symptoms of anxiety and depression even before the pandemic, but in a number of European countries – Belgium and Finland – there was a widening of gender gaps in some indicators of mental health, particularly so for anxiety (Figure 1.6).

Figure 1.6. Gender gaps in the share of young people with symptoms of anxiety have widened over the course of the pandemic in Belgium and Finland



Note: Symptoms of anxiety in Belgium and Finland have been measured using the General Anxiety Disorder-7 (GAD-7) scale, with a cut-off of ≥10. Data for Belgium refers to 18-29 year-olds. Data for Finland cover students in grades 8 and 9 of basic education, 1st and 2nd year students in upper secondary school, and 1st and 2nd year students in vocational institutions (data restricted here to ages 14 to 20).
Source: Belgium: Sciensano (2022[6]), https://datastudio.google.com/embed/reporting/7e11980c-3350-4ee3-8291-3065cc4e90c2/page/ykUGC; Finland: Finnish Institute for Health and Welfare (2021[8]), https://thl.fi/fi/tutkimus-ja-kehittaminen/tutkimukset-ja-hankkeet/kouluterveyskysely/kouluterveyskyselyn-tulokset.

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1.5. The pandemic heavily disrupted mental health care

1.5.1. The pandemic heavily disrupted mental health care, particularly during the first wave

In the early stages of the pandemic, traditional identification, referral and treatment routes for mental health conditions were heavily disrupted. The closure of schools and subsequent suspension of school mental health programmes posed a particular challenge to the prevention and timely identification of mental health issues amongst young people. Schools serve as a primary site of both mental health promotion and access to mental health services, and frontline workers such as teachers are often well-placed to identify early symptoms of mental health issues. The scale of the disruption was significant: a WHO survey in June-August 2020 found that approximately three-quarters of school mental health programmes globally were fully or partially disrupted (WHO, 2020[35]). This disruption has meant that mental health issues amongst young people have risked going unidentified (OECD, 2021[1]).

The measures implemented to contain the pandemic not only disrupted the prevention and identification of mental health issues, but also affected their treatment. Mental health care services – those for the general population and for children and adolescents – were heavily disrupted in European countries, particularly in spring 2020 during the first lockdowns. Social distancing and confinement measures limited the capacity to provide face-to-face services, health care efforts were focused on combatting rising infection and hospitalisation rates, and fear of infection meant that many avoided contact with care providers. Many countries quickly reconfigured care delivery to remote formats to ensure the continuity of care, with mental health services increasingly delivered online or by telephone (OECD, 2021[35]).

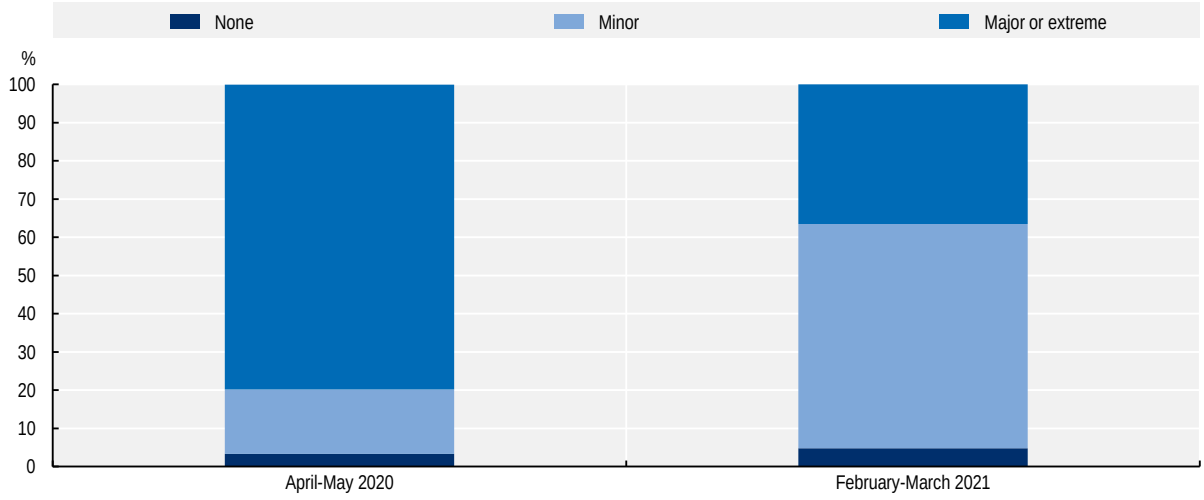
While services were quickly adapted to remote delivery, there were nonetheless significant disruptions during the first wave of the pandemic. A 2020 WHO survey found that almost 40% of participating European countries reported disruption to at least 75% of mental, neurological and substance use services/interventions, and that globally over 70% of services for children and adolescents were partially or completely disrupted (WHO, 2020[34]). In a survey of heads of child and adolescent psychiatry in university hospitals across Europe in April/May 2020, 80% reported that the pandemic was affecting services "extremely" or "to a major degree", 79% reported a decrease in inpatient service use and 83% reported a decrease in outpatient service use compared to pre-pandemic levels (Revet et al., 2021[36]).

1.5.2. Following initial disruption, demand for mental health care appears to have increased in many European countries, challenging already-stretched mental health care systems

The extensive disruption to mental health care services during the first lockdowns eased with the relaxation of confinement measures, albeit at varying speeds across countries. In Ireland, for instance, it took some time for referral volumes for child and adolescent services to return to pre-pandemic levels (referrals saw an initial decline for six months) (McNicholas et al., 2021[37]). Child and adolescent services were also disrupted as the second wave of the pandemic swept through Europe, though not as severely as during the first wave (Figure 1.7).

Figure 1.7. Heads of child and adolescent services across Europe reported the most significant disruptions to services in spring 2020, though disruptions persisted in early 2021

Share of survey respondents who reported disruptions to the provision of services to patients and their families



Note: The ESCAP's survey was distributed to the heads of child and adolescent psychiatry services in university hospitals across Europe in two waves. Responses were received from 22 European countries. Multiple responses were received from some countries and responses were aggregated, meaning that the results may be more representative of particular European countries than others. The same respondents did not necessarily respond to both waves, limiting comparability of the data across waves. Nevertheless, the results provide some insights into the perceived impact of the pandemic on mental health care services.

Source: Revet et al. (2021[36]), "Perceived impact of the COVID-19 pandemic on child and adolescent psychiatric services after 1 year (February/March 2021): ESCAP CovCAP survey", https://doi.org/10.1007/s00787-021-01851-1.

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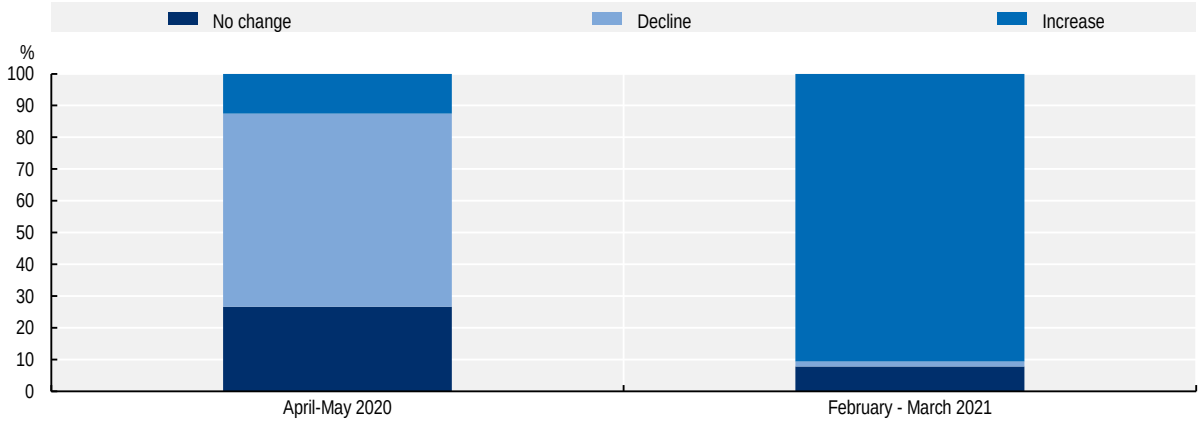
There are signs that demand for mental health care increased across many European countries as service disruptions eased. While 61% of respondents to the first round of the ESCAP survey in April-May 2020 reported a decline in referrals for child and adolescent mental health care, by February-March 2021 over nine out of ten respondents reported an increase in referrals or requests for assessments compared to pre-pandemic levels (Figure 1.8). In Ireland, routine and urgent referrals for child and adolescent mental health care increased between 50-180% between September-November 2020 compared to pre-pandemic levels (McNicholas et al., 2021[37]).

Figure 1.8. Over nine out of ten heads of child and adolescent services across Europe reported an increase in referrals for mental health care in 2021 compared to pre-pandemic levels

Share of survey respondents who reported no change, a decline or an increase in the number of referrals or requests for assessments compared to pre-pandemic levels, 2020 and 2021



Note: The ESCAP's survey was distributed to the heads of child and adolescent psychiatry services in university hospitals across Europe in two waves. Responses were received from 22 European countries. Multiple responses were received from some countries and responses were aggregated, meaning that the results may be more representative of particular European countries than others. The same respondents did not necessarily respond to both waves, limiting comparability of the data across waves. Nevertheless, the results provide some insights into the perceived impact of the pandemic on demand for mental health care.
Source: Revet et al. (2021[36]), Perceived impact of the COVID-19 pandemic on child and adolescent psychiatric services after 1 year (February/March 2021): ESCAP CovCAP survey, https://doi.org/10.1007/s00787-021-01851-1.

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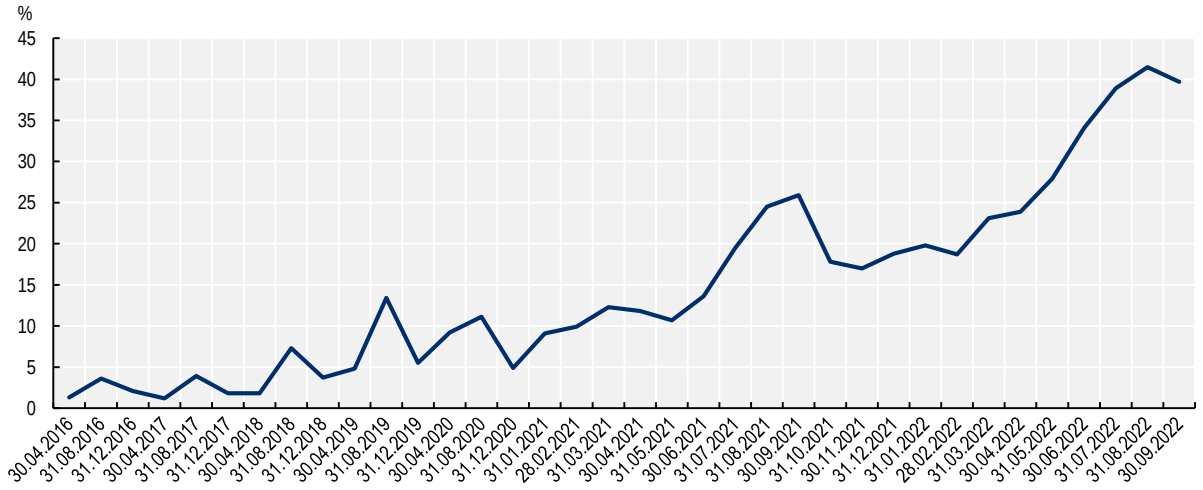
Care complexity also increased, at least to the extent that the number of young people requiring mental health care for suicidal ideation increased. In the second wave of the ESCAP survey in February-March 2021, more than eight out of ten respondents reported an increase in the number of cases related to suicidal crises amongst children and adolescents (Revet et al., 2021[36]). In France, this challenge appears to have persisted into 2022: between January and September 2022, the weekly number of emergency visits for suicidal ideation amongst young people (aged 15-24) was consistently higher than any other pandemic year, and at times three to four times higher than pre-pandemic levels (Santé publique France, 2022[38]). Similarly in the Netherlands, data for April-June 2022 indicate that the number of GP visits related to suicidal ideation or attempts amongst young people were more than one-third higher (39%) than for the same period in 2019 (Dutch National Institute for Public Health and the Environment, 2022[39]).

The pandemic has challenged already stretched mental health care services, with reports that waiting times increased in a number of European countries. In Belgium and Switzerland, care providers reported increased waiting times for mental health care during the pandemic (Belgian Federal Public Service Health Food Chain Safety and Environment, 2021[40]; Werling et al., 2022[41]). A March 2021 review in the Netherlands similarly reported an increase in both waiting times and waiting lists for young people, with waiting times in some inspected institutions reported to have doubled (Dutch Health and Youth Care Inspectorate, 2021[42]). More recent data from Finland indicate that these challenges persisted in 2022: in September 2022, 40% of children and young people had to wait more than 90 days for specialised mental health care, up from 13% in August 2019 (Figure 1.9).

Figure 1.9. Waiting times for specialised mental health care for children and young people increased significantly in Finland in 2021 and 2022

Share of children and young people waiting more than 90 days for non-urgent specialised mental health care, hospital districts



Note: The Finnish Institute for Health and Welfare does not conduct monthly quality checks on this data, so it should be interpreted with caution.
Source: Finnish Institute for Health and Welfare (2022[43]), Access to treatment in specialised medical care, https://thl.fi/fi/tilastot-ja-data/tilastot-aiheittain/terveyspalvelut/hoitoonpaasy-erikoissairaanhoidossa.

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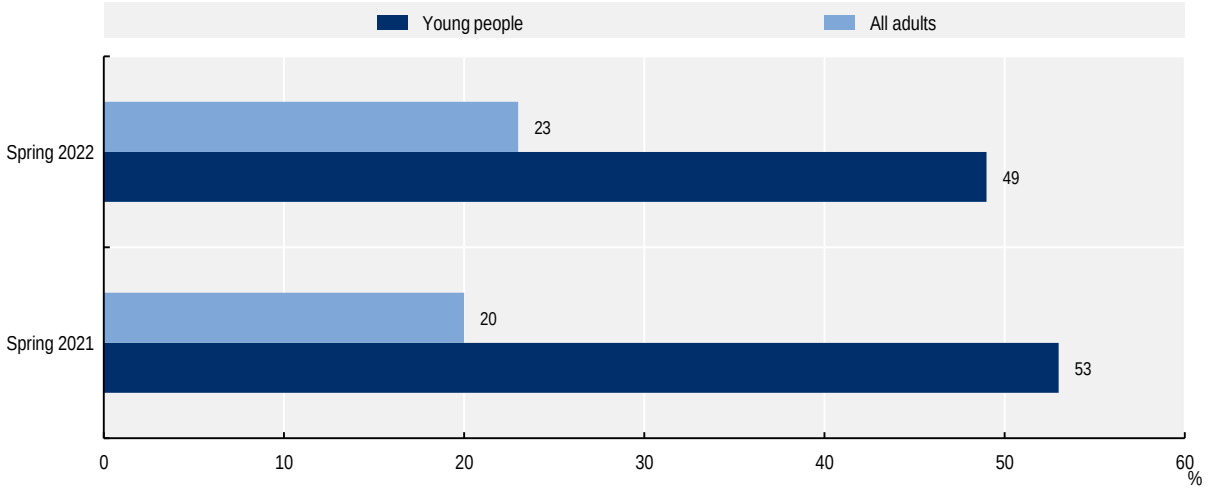
A worrying number of young Europeans now report unmet needs for mental health care. In spring 2021, more than one in two young Europeans aged 18-29 (53%) reported unmet needs for mental health care (Figure 1.10). While the share of young people reporting unmet mental health care needs decreased slightly in spring 2022, almost one in two young Europeans continued to report unmet needs (49%), more than double the share of the adult population (23%).

Figure 1.10. Almost one in two young Europeans reported unmet needs for mental health care in spring 2022

Share of people in the EU reporting unmet needs for mental health care, young people (18-29) compared with all adults, spring 2021 and spring 2022



Note: Respondents were asked about types of medical examinations or treatments that they needed but were currently unable to receive, including mental health care. The data relate to the population who reported current unmet health care needs (14% of 18-29 year-old respondents reported current unmet healthcare needs in spring 2022).
Source: Eurofound (2022[27]), *Fifth round of the Living, working and COVID-19 e-survey: living in a new era of uncertainty*, https://doi.org/10.2806/190361.

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While there are indications that the need for mental health care has increased in some countries, it is not yet known whether and to what extent heightened mental distress will translate to increased effective demand for mental health care amongst young people in the years to come. Given significant gaps between the need for and availability of support even before the pandemic, the implications would be significant. New and extended sources of uncertainty across Europe – Russia's war of aggression against Ukraine, the cost-of-living crisis and the climate crisis – could also compound the challenges presented by the pandemic years. Given the extent of the impact of the pandemic on young people's mental health, the serious disruptions to mental health care and indications that need for care is growing in some countries, it will be critical that countries ensure appropriate support is available to those who need it.

1.6. European countries stepped up efforts on youth mental health

European countries have taken actions to mitigate the consequences of the pandemic on young people's mental health, typically by strengthening prevention and promotion efforts, and/or expanding mental health support.

1.6.1. Countries scaled up prevention and promotion measures

Preventing mental ill-health and promoting good mental health has taken on a new urgency as a result of the pandemic. Many European countries have stepped up prevention and promotion measures, often including youth-oriented or youth-targeted measures. Awareness campaigns have been common. For example, in June 2021, France launched "*J'en parle à"* (*"I talk to"*), a prevention campaign targeted to adolescents to encourage them to talk about mental health and take up remote support services if needed. An evaluation of the campaign suggested it had been well received, with over nine out of ten (94%) teenagers finding the campaign useful, and evaluations finding increased use of "*Fil Santé Jeunes*" (*"Youth Health Threads"*), the digital and telephone support platform for young people throughout the campaign (Santé publique France, 2022[44]). Similarly, Lithuania launched "*Pagalba Sau"* ("*Self-help"*), a national mental health platform designed to provide information on how to maintain good emotional health during the pandemic, with a dedicated section for teenagers. Targeted awareness-raising campaigns for young people were also launched in Portugal, Germany and the Netherlands (OECD, 2021[45]).

Beyond awareness campaigns, a range of interventions have been deployed across European countries to protect and promote young people's mental health. At the European level, a new EU initiative on mental health was announced in the 2022 EU State of the Union address. A number of flagship initiatives have also been launched within the context of 2022 being designated the European Year of Youth. In February 2022, the European Commission launched a call for proposals as part of the *EU4Health* Programme, allocating EUR 8 million to support – amongst other things – interventions to promote the mental health and well-being of young people and their families in vulnerable situations.

National initiatives have also been common. For example, Latvia allocated EUR 3 million to support young people's mental health in April 2021, by encouraging activities such as youth summer camps and local pupil council initiatives (OECD, 2021[45]). In Hungary, the Snétberger Music Talent Centre provided online music teaching and mentoring to disadvantaged students to promote social inclusion (Eurofound, 2021[46]). The European Commission's 2021 EU Health Award recognised a number of pioneering initiatives by local authorities and non-governmental organisations across Europe to protect and promote young people's mental health during the pandemic, such as "*Action Suricate"* (*"Action Meerkat"*), a local initiative by the French municipality of Toulouse to protect young people's mental health through peer-to-peer exchanges and support (European Commission, 2022[47]).

1.6.2. European countries expanded mental health support for young people

Many European countries have expanded access to mental health support for young people in response to the COVID-19 crisis. For example, many European countries expanded or developed new mental health information and support platforms (typically by telephone or online) to provide crisis support to young people during the pandemic. In Germany, the digital and telephone counselling services offered to young people by "*Nummer gegen Kummer"* ("*Number against grief*") were expanded. In Austria, additional funding was made available to expand access to "*Rat auf Draht"*, the national crisis telephone service for children and young people, alongside the expansion of an online suicide-prevention programme for young migrants (OECD, 2021[48]).

Some European countries also expanded low-threshold mental health support. In Finland, the government expanded its programme to provide psychosocial support through one-stop youth centres called "*Ohjaamo/Navigatorn*", which offer integrated agency interventions to young people (OECD, 2021[48]). In the Netherlands, in December 2020 the central government provided municipalities EUR 58 million funding to support young people, including EUR 3.5 million allocated specifically to provide low-threshold preventative support to young people, including through "*Join Us"*, an initiative to provide information and guidance on loneliness to young people and their parents (Dutch Central Government, 2020[49]).

Most European countries also bolstered psychosocial and mental health support for young people in schools. In a 2022 OECD survey, 15 out of 22 surveyed European countries indicated that they had newly implemented or reinforced existing psychosocial and mental health support for students in response to the pandemic in the 2021/2022 school year, with a number of other European countries indicating that such measures were planned for the 2022/2023 school year (Table 1.1). Most support was provided for students in primary and secondary schools, with over half (55%) of countries indicating that they implemented support at primary and secondary level in the 2021/2022 school year, compared to 32% at the tertiary level and 18% at pre-primary level (Table 1.1).

Table 1.1. Many European countries bolstered psychosocial and mental health support for students in response to the COVID-19 pandemic, typically in primary and secondary schools

Country	Implemented in school year 2021/2022			Plans for implementation in school year 2022/2023		
	Pre-primary	Primary to upper secondary	Tertiary	Pre-primary	Primary to upper secondary	Tertiary
Austria	-	✓	✓	-	✓	✓
Belgium	✓	✓	✓	-	-	✓
Denmark	-	-	-	-	-	×
Estonia	-	✓	-	-	✓	-
Finland	-	-	-	-	-	-
France	×	×	✓	×	×	✓
Germany	-	-	✓	-	-	✓
Iceland	×	-	-	×	×	×
Italy	✓	✓	-	-	-	-
Latvia	×	✓	-	×	✓	-
Lithuania	×	✓	×	×	✓	×
Luxembourg	-	-	✓	✓	✓	-
Netherlands	-	-	-	-	-	-
Norway	×	-	×	×	-	-
Poland	✓	✓	×	✓	✓	×
Portugal	✓	✓	-	✓	✓	-
Slovak Republic	×	✓	✓	✓	✓	-
Slovenia	-	✓	×	-	-	×
Spain	-	-	-	-	-	-
Sweden	×	✓	-	×	✓	-
Switzerland	-	-	-	-	-	-
United Kingdom	×	✓	✓	×	✓	✓

Note: Data refer to measures that have been or will be newly implemented or reinforced in response to the COVID-19 pandemic.
Legend: (✓) where existing national measures have been reinforced or new measures have been introduced as a result of the crisis; (×) where no new national measures were introduced or existing measures were not reinforced; (-) where countries could not answer, or where Schools/Districts/the most local level of governance could decide to implement measures at their own discretion.
Source: OECD (2022[50]), *Education at a Glance 2022: OECD indicators*, https://doi.org/10.1787/3197152b-en.

A number of European countries have also bolstered funding to strengthen mental health care services for young people. In Denmark, DKK 100 million (EUR 13 million) was allocated for the period 2020-22 to promote easier treatment and support for children and young people experiencing mental health issues. In Romania, child and adolescent community mental health services were developed and reinforced as part of the Open Minds project (European Education and Culture Executive Agency, 2022[51]). Austria, Poland and France also increased funding for mental health care either to develop new services (Austria and Poland) or extend access to existing services (France) (OECD, 2021[35]).

The COVID-19 pandemic has underscored the importance of an inter-sectoral approach to protect and care for young people's mental health. Many of the protective factors for good mental health go beyond the scope of health systems, and employment, education and social protection policies all play an important role in promoting good mental health. While interest in inter-sectoral approaches to mental health was growing before the pandemic, it may have served as

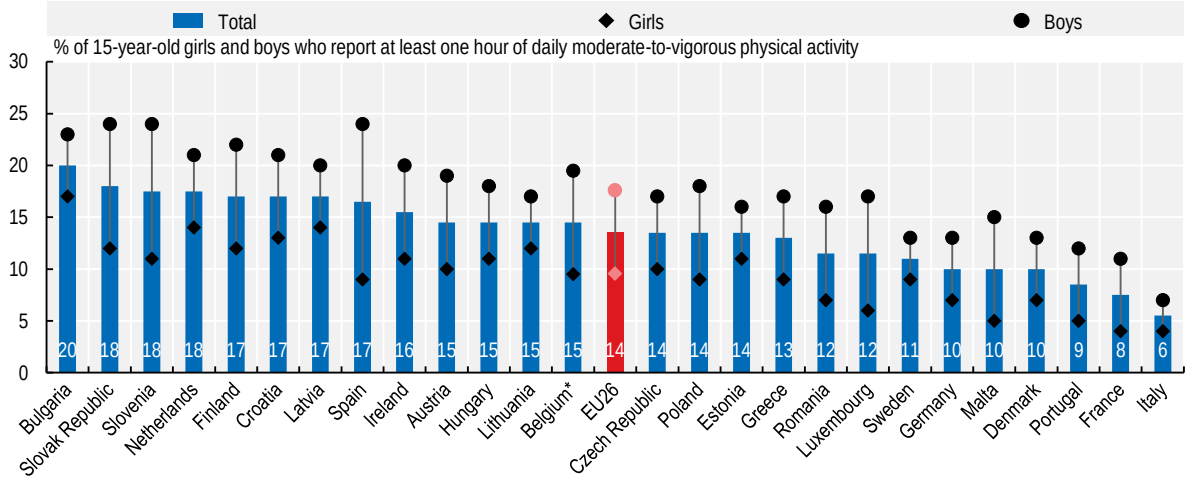
a catalyst. In June 2022, the Ministries of Health, Education and Social Affairs in the Netherlands announced an inter-sectoral "movement for mental health" with a specific focus on young people, and a strong emphasis on prevention and promotion in neighbourhoods, workplaces, schools and online (Government of the Netherlands, 2022[52]). Given the scale of the impact, and the interrelatedness of the health, social and economic impacts of the pandemic, a whole-of-society approach to mental health will be critical to prevent permanent scarring.

1.7. Physical activity among children and adolescents decreased during the pandemic

Physical and mental health are closely related; physical activity is a protective factor for good mental health, and low physical activity can contribute to mental health issues in children and adolescents.

Evidence from a number of European countries shows that physical activity amongst children and adolescents declined during the pandemic, from an already low level before the pandemic. Prior to the pandemic, only about one in seven (14%) adolescents aged 15 years old reported doing at least one hour of moderate-to-vigorous physical activity every day as recommended by the WHO (Figure 1.11). Boys were more physically active than girls: 18% of 15-year-old boys on average reported at least one hour of moderate to vigorous physical activity every day, compared with 10% only of 15-year-old girls. Italy, France and Portugal had the lowest proportion of boys and girls meeting the WHO recommendation (HBSC, 2022[53]).

Figure 1.11. Only one in seven 15-year-olds met the WHO recommendation on minimum amount of physical activity each day before the pandemic across EU countries



Note: Data refer to 2018. The EU average is unweighted. *The data for Belgium is the unweighted average of Wallonia and Flanders.
Source: HSBC (2022[53]), Health Behaviour in School-aged Children (HBSC) survey 2017/18, https://hbsc.org/data/.

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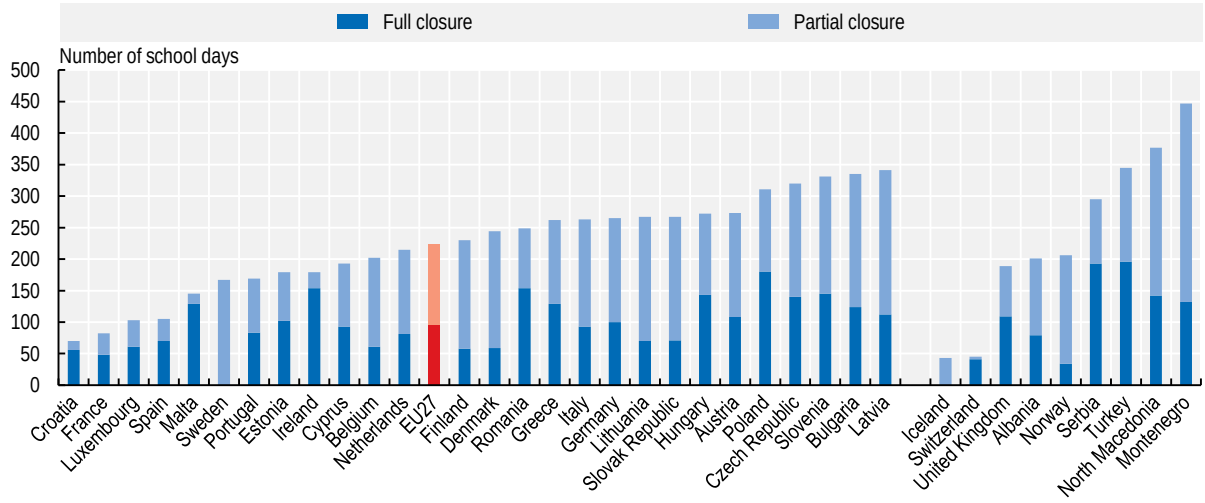
School closures, the closure of sports facilities and other mobility restrictions were associated with a reduction in physical activity amongst children and adolescents in virtually all European countries with available data. Full school closures occurred in all European countries, with the exception of Sweden and Iceland, although the number of days of closure varied widely (Figure 1.12).

Evidence from a number of countries shows that physical activity among children and adolescents reduced substantially during the pandemic. In Italy, Spain and Portugal, a survey found that the share of children and adolescents aged 3-18 years old that did not meet the WHO recommendation of at least one hour of daily physical activity increased markedly during the first lockdown in March and April 2020: it rose from 53% to 85% in Italy, from 34% to 86% in Spain and from 46% to 86% in Portugal (Francisco et al., 2020[54]). Another study in 10 European countries (Belgium, France, Germany, Hungary, Italy, Poland, Portugal, Romania, Slovenia and Spain) also found that over 80% (81%) of children aged 6-18 years old did not meet WHO recommendations in May-June 2020 (Kovacs et al., 2021[55]).

Figure 1.12. Full school closures occurred in nearly all EU countries during the pandemic, but for various lengths



Note: Data available for 775 school days from 16-02-2020 until 31-03-2022. Full school closures refer to situations where all schools were closed at the national level due to COVID-19, accompanied by distance-learning to ensure education continuity. Partial school closures refer to school closures in some regions or for some grades, or with reduced in-person classes.
Source: UNESCO 2022, adapted from European Education and Culture Executive Agency (2022[51]), "The impact of the COVID-19 pandemic on the mental health of young people. Policy responses in European countries", https://doi.org/10.2797/547518.

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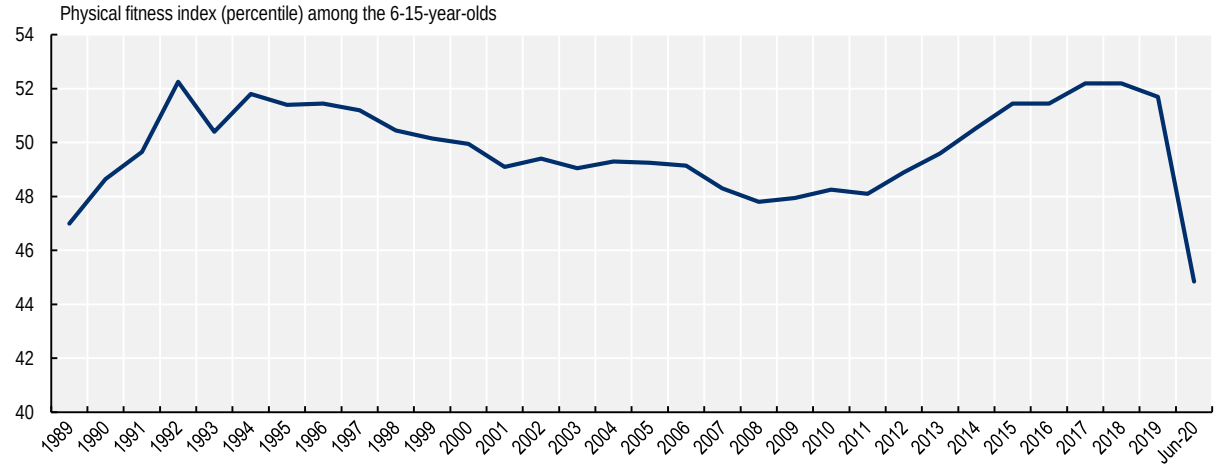
In Slovenia, physical fitness of school-aged children from 6 to 15 years old fell by about 13% in June 2020, compared with 2019. It was the lowest level ever measured since the first data were available more than 30 years ago (Figure 1.13).

Figure 1.13. In Slovenia, physical fitness among school children fell sharply in June 2020 compared with previous years



Note: The physical fitness index covers the standardised results of 8 fitness measures: 20-s arm-plate tapping, standing long jump, backwards obstacle course, 60-s sit-ups, stand and reach, bent arm-hang, 60m dash and 600m run. This survey was usually carried out in April, except in 2020 when it was carried out in June as students were gradually returning to school after the first lockdown. Data for 2020 included about 15% of Slovenian children aged 6- to 15-year-olds.
Source: SLOfit Database; Jurak et al., (2021[56]), "A COVID-19 Crisis in Child Physical Fitness: Creating a Barometric Tool of Public Health Engagement for the Republic of Slovenia", https://doi.org/10.3389/fpubh.2021.644235.

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However, some other surveys show relatively less dramatic reductions in physical activity during the pandemic. In Germany, a representative study of 4-17 year-olds found that children and adolescents engaged in less sport activities, but increased other physical activities (playing outside, walking and cycling, gardening and doing housework) during the first lockdown (Schmidt et al., 2020[57]). In Lithuania, a small survey found that physical activity remained relatively unchanged during the first lockdown: about one-third (34%) of children did not meet the WHO recommendation in March-June 2020, about the same rate as before the pandemic (Breidokienė et al., 2021[58]).

Several factors affected levels of physical activity during the pandemic:

- School-based physical activities came to a halt during school closures and often remain limited even when schools re-opened;
- Organised sports were also interrupted and playgrounds, parks and other public green spaces were closed at least during lockdown periods;
- However, home-based physical activities partly offset the impacts of these restrictions, even though these activities were limited by indoor and outdoor space;
- Young people who used to do sport regularly before the pandemic were more likely to remain physically active during the pandemic and resume their sport routine after the pandemic;
- Having a structured daily routine during the lockdowns contributed to maintaining a certain level of physical activity;
- In general, older children and adolescents were less likely to remain physically active.

During the lockdown periods, home-based physical activities typically increased, even though the opportunities to do physical activities at home were limited by home features. Children and adolescents living in houses reported less reduction in physical activity compared with those living in apartments, and this was also the case for children who could go outside (e.g. with access to a garden) (Paterson et al., 2021[59]). A Spanish study of children aged 2-12 years old showed that those with outdoor space engaged in more physical activities compared with children without such space (Berasategi Sancho et al., 2021[60]). Children and adolescents living in urban areas reduced their physical activity more than those living outside cities and towns, as shown for example in a Croatian study of 16-year-olds (Zenic et al., 2020[61]).

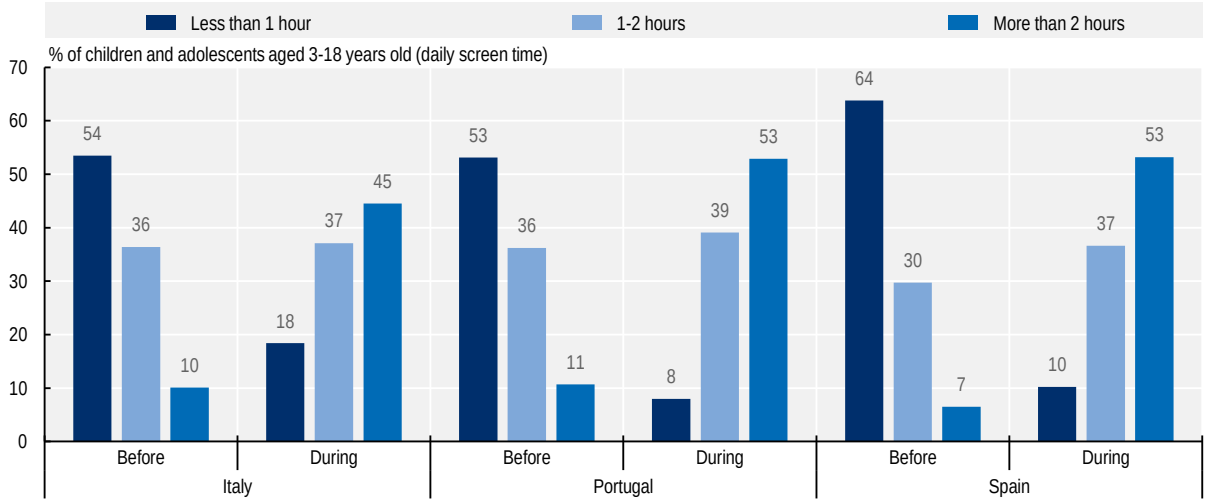
The effect of containment measures on physical activity during the pandemic was consistently more marked for older adolescents than for younger children (Paterson et al., 2021[59]), reinforcing the typical decrease in physical activity as children get older. For example, a study of children aged 2-11 years old in Italy showed that 65% of the 2-5 year-olds reduced their usual physical activity during the first lockdown, but this proportion reached 87% among the 6-11 year-olds (Censi et al., 2021[62]).

Having a structured daily routine contributed to continuing to be physically active, and parental guidance and support was helpful to maintain a certain level of physical activity (Kovacs et al., 2021[55]; Censi et al., 2021[62]). In Italy, among the 40% of children aged 2-11 years old who maintained some physical activity every day during the first lockdown, three-quarters practiced this physical activity with their parents (Censi et al., 2021[62]).

Those who used to do sport out of home before the pandemic were also more likely to remain physically active or resume their sport routine. A survey in Greece showed that 12-17 year-olds who participated in organised sport before the pandemic reported higher levels of physical activity during the pandemic, even though their physical activity decreased (Morres et al., 2021[63]).

Alongside a decline in physical activity, sedentary behaviour such as staying seated and screen time typically increased during the pandemic (Paterson et al., 2021[59]). For example, a survey found that the share of children and adolescents aged 3-18 years old spending two hours or more in front of a screen every day was almost six times higher on average in Italy, Portugal and Spain during the first lockdown in March and April 2020 than before the pandemic (Figure 1.14).

Figure 1.14. Screen time increased starkly during the first lockdown in March-April 2020 in Italy, Portugal and Spain



Source: Adapted from Francisco et al. (2020[54]), "Psychological Symptoms and Behavioral Changes in Children and Adolescents During the Early Phase of COVID-19 Quarantine in Three European Countries", https://doi.org/10.3389/fpsyt.2020.570164.

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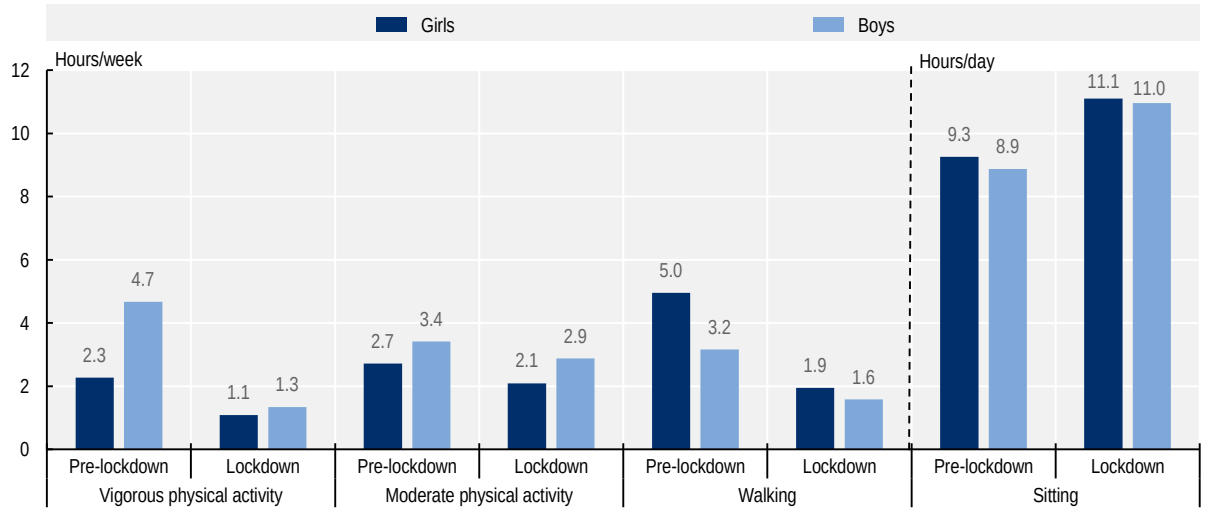
In the Austrian city of Innsbruck, a study showed that the containment measures implemented during the second lockdown (from mid-November 2020 to mid-January 2021) greatly reduced various physical activities among high-school teenagers in Fall/Winter 2020/21(Figure 1.15). There was a steep reduction in sport and other vigorous physical activity among boys, while time spent walking decreased much more for girls. Boys and girls reported staying seated longer – about 11 hours every day (University of Innsbruck, 2021[64]).

Figure 1.15. In Innsbruck (Austria), time spent on physical activities decreased significantly among adolescents during the lockdown at the end of 2020 and early 2021



Note: Total hours per week for physical activities and total hours per day for sitting.
Source: University of Innsbruck (2021[64]), "Physical activity and sitting time prior to and during COVID-19 lockdown in Austrian high-school students", https://doi.org/10.3934/publichealth.2021043.

StatLink https://stat.link/cxhov3

1.7.1. Several countries have introduced new policies and programmes to promote greater physical activity among children and adolescents

In response to already low levels of physical activity before the pandemic and the further reduction during the pandemic, several countries have taken actions to promote greater physical activity among children and adolescents to avoid any long-lasting impacts of physical inactivity on young people's physical and mental health. While each policy can have its own benefits, it is unlikely that any single policy will have a major impact as many behavioural, social and environmental factors influencing physical activity.

New policies and programmes have focused on three main areas:

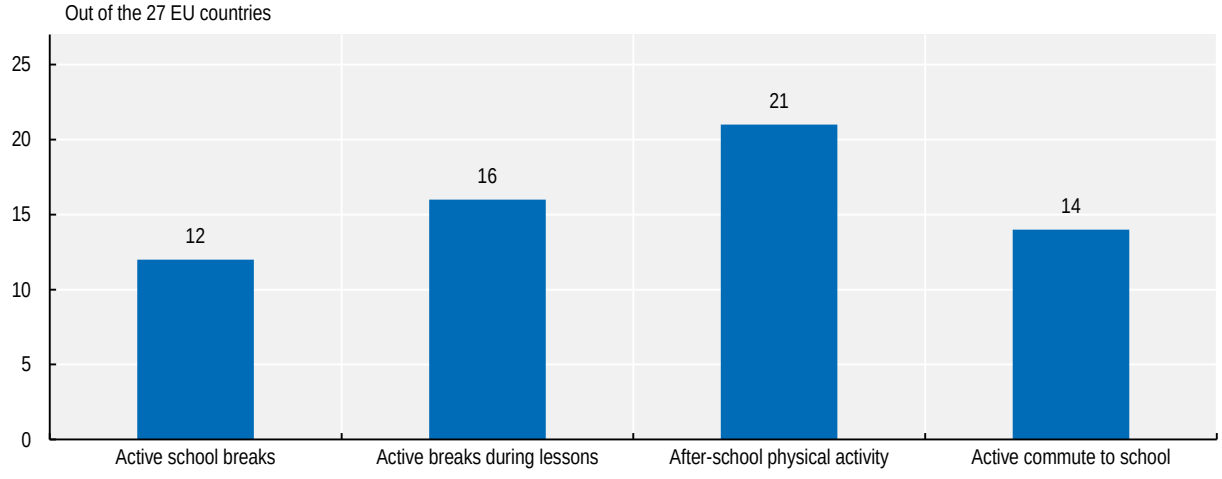
- programmes in schools
- policies to increase access to sports facilities; and
- public awareness campaigns

Programmes in, or with, schools can play an important role in increasing physical activity amongst children. Some school programmes were adjusted to promote physical activity during the pandemic, despite the lockdowns. In Ireland, for example, the "active school week" was transformed into an "active home week".

Some initiatives have encouraged a return to physical activity following the confinements. For example, Denmark supported schools in organising a day of sports to promote physical activity and well-being in primary and lower secondary schools in the Summer 2021 (WHO, 2021[65]).

In all EU countries, all schools are required by law to provide physical education classes. In 2021, programmes to encourage active school breaks were implemented in 12 EU countries, active breaks during lessons in 16 countries, after-school physical activity programmes in 21 countries and programmes to encourage active commute to school in 14 EU countries (Figure 1.16) (WHO, 2021[65]). However, school programmes and initiatives often remain voluntary, with varying take-up rates.

Figure 1.16. A number of school-based programmes were implemented in EU countries to promote physical activity among children and adolescents in 2021



Note: Active school breaks include opportunities for physical activity (e.g. playground) whereas active breaks during school lessons consist of brief, structured physical activity during lessons to break up periods of sitting.
Source: WHO (2021[65]), Physical activity factsheets for the European Union Member States in the WHO European Region.

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Many countries have also developed initiatives with sports facilities and sports clubs because they can play a major role in enabling and promoting physical activity among children and adolescents. In France, the label *Generation 2024* encourages schools and universities to strengthen the sports offer and allow local sports clubs to use schools and universities' sports facilities. Over 2 840 schools and universities have already been awarded the label. France aims to label 20% of schools and universities by 2024, the year of the Olympic Games.

Initiatives to increase physical activity also included public awareness campaigns. In 2021, 23 EU countries reported to have clearly-formulated national campaigns to raise public awareness about physical activity, targeting in some cases children and adolescents specifically (WHO, 2021[65]). For example, during the pandemic, Healthy Ireland's public information campaigns were re-purposed and re-branded into the "*In This Together*" and "*Keep Well*" campaigns to highlight physical activity and sports that could be maintained during the COVID-19 restrictions, including for children and adolescents (such as exercise at home, online classes, walking, running, cycling, and outdoor swimming). In late 2021, a partnership between Sport Ireland and Healthy Ireland forged the "*Let's Get Back*" campaign, which encouraged a return to organised sport. Similarly, Germany, France and many other EU countries launched national or local initiatives with Olympic Committees or sports clubs to promote a return to organised sport among children and adolescents in 2021 and 2022.

At the EU level, the campaign *HealthyLifestyle4All* (HL4A) was launched in 2021 to increase awareness of a healthy lifestyle across all generations and facilitate access to sport, physical activity and healthy diets (European Commission, 2021[66]). It encourages all organisations to carry out an initiative, activity or campaign to promote healthy lifestyles across all generations and social groups. About 90 organisations pledged an initiative as part of the *HealthyLifestyle4All* campaign by November 2022.

1.8. The pandemic and containment measures also affected the nutrition of children and adolescents, with mixed impacts

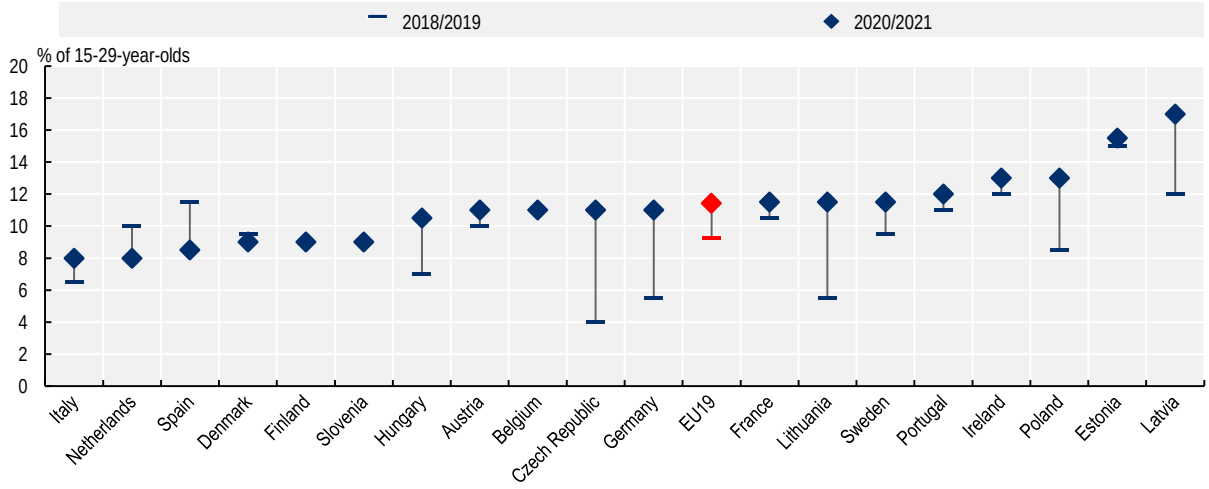
School closures and other mobility restrictions affected young people's nutrition habits in different ways. Food consumption increased for a substantial number of children and adolescents in EU countries during the pandemic, though it is unclear to what extent food choices were healthier or not. In Germany, a study found that increased food intake was mostly related to increased intake of bread, but also of sweet and processed food (Huber et al., 2020[67]). By contrast, in Poland, a study amongst 10-16 year-olds showed that the consumption of fruit and vegetables increased on average (Kołota and Głąbska, 2021[68]). A study covering Italy, Spain and South American countries (Chile, Colombia and Brazil) found that the consumption of fried food and sweet food as well as fruit and vegetables increased among 10-19 year-olds during the lockdown in April and May 2020 (Ruiz-Roso et al., 2020[69]).

Children and adolescents share, to some extent, the same eating habits as their parents. Parents had a particular influence over food choices, especially during lockdowns. For example, a small survey in France found that 42% of parents reported that their children asked for food more often, sometimes out of boredom. While over two-thirds of parents reported cooking more at home, a similar proportion also reported that they had relaxed rules around food consumption and meals, being less strict on meal times and places where to have meals at home (CERIN, 2020[70]).

School closures led a number of children and adolescents to lose access to healthy and free (or low-cost) school meals. Some countries took exceptional measures to maintain school meals for children in need even when schools were closed. For example, Lithuania supported municipalities to provide food rations to children who received free school meals before the pandemic.

The pandemic also affected young adults' access to nutrition, with those on low incomes reporting more difficulties buying food during the pandemic, especially healthy food. On average across EU countries, one in nine (11%) 15-29 year-olds reported going through times when they did not have enough money to buy food for them or their families in 2020/2021 (Figure 1.17). This rate was greater than before the pandemic (9% in 2018/2019).

Figure 1.17. Over 10% of young adults in several countries did not always have enough money to buy food in 2020/2021



Note: The question is "Have there been times in the past 12 months when you did not have enough money to buy food that you or your family needed?".
Source: Gallup Survey.

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1.8.1. Several countries have taken actions to improve nutrition among school-aged children and young people

Several interventions have been strengthened to encourage healthy nutrition among children and adolescents since the pandemic, particularly school-based programmes as well as initiatives to help parents and young adults on low incomes to buy food.

Many countries have expanded or launched new initiatives to provide healthy food at school when schools re-opened during the pandemic (including Denmark, Finland, France, Latvia, the Netherlands, and Portugal). France expanded an initiative to provide affordable school meals and free breakfast to children in need. About 100 000 French school children benefited from free breakfasts in the school year 2020-21 and nearly 300 000 school children were expected to benefit from this initiative in 2021-22. In addition, nearly 2.5 million meals were provided to school canteens in rural areas at a price below EUR 1 in 2020-21 (Ministère de l'Éducation nationale et de la Jeunesse, 2021[71]).

In 2021, EU countries agreed that school-aged children in need – those at risk of poverty or social exclusion – should receive at least one healthy meal each school day under the new European Child Guarantee (Box 1.2).

Additionally, some European countries have introduced new programmes since the onset of the pandemic to help young adults and families on low incomes to buy food. For example, Italy announced a EUR 400 million Fund for food aid at the start of the first lockdown in February 2020. Local city councils were able to use COVID-19-specific social vouchers to help the most vulnerable groups buy food. Priority was given to families with young children, disabled people and the elderly. Italy decided to extend the scheme in early December 2020, with an additional fund of EUR 400 million (Edenred, 2021[72]). A new programme in Slovenia entitled every university student to one e-coupon per day (EUR 2.63/coupon) to use in any restaurant. In France, 20% of university students who benefited from the existing food support scheme reported that the COVID-19 pandemic led them to seek greater food support. About 80% of all these university students are international students.

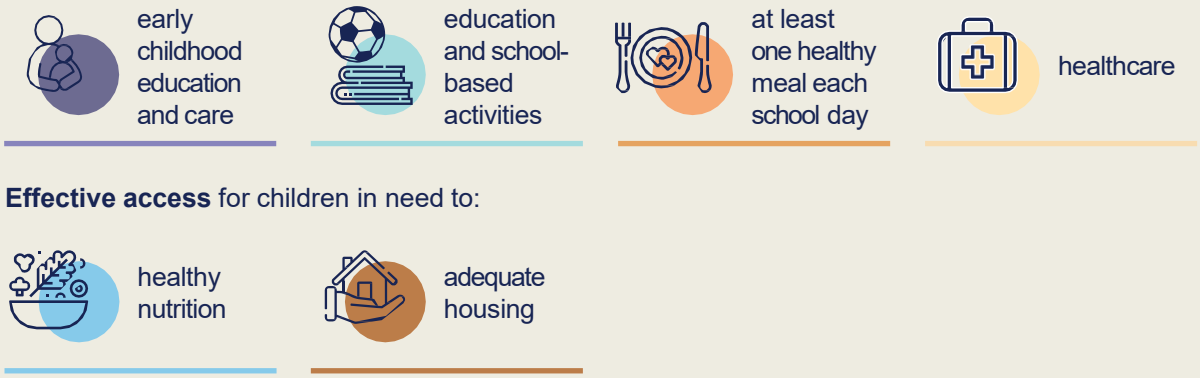
Other policies developed before the pandemic were strengthened to encourage healthy food choices for parents, adolescents and children, such as front-of-pack nutrition labelling. As part of the *Farm to Fork* strategy, the EU plans to harmonise mandatory front-of-pack nutrition labelling for food products to enable consumers to make healthier food choices, by the end of 2022. Several labelling schemes were developed across Europe before the pandemic. For example, since 2017 the French Government introduced a voluntary front-of-pack food label called *Nutri-Score*. This *Nutri-Score* provides easy-to-understand information on the overall nutritional quality of food products. In 2020, nearly 60% of the French population reported that they had modified their food purchasing behaviour with the help of *Nutri-Score* and 89% believed that *Nutri-Score* should be mandatory for all food products (Santé publique France, 2021[73]). OECD analysis of *Nutri-Score* shows that it helps to improve the nutritional quality of the food put on the market by

producers and the food intake by consumers, leading to health benefits and health care savings (OECD, 2022[74]). *Nutri-Score* has already been adopted in a number of other countries like Belgium, Germany, Luxembourg, the Netherlands and Switzerland.

Box 1.2. The European Child Guarantee

The European Child Guarantee, adopted in 2021, aims to break the intergenerational cycle of poverty and social exclusion by guaranteeing children and adolescents in need access to a set of health, education and other key services.

Free and effective access for children in need to:



The European Child Guarantee builds on earlier EU efforts to support healthy food consumption at school. These include the EU school fruit and vegetables scheme, which was launched in 2009 to encourage healthy eating habits among children at school. In 2017, the programme was extended to incorporate the EU School Milk Subsidy Scheme. The EU annual budget for this broader scheme is EUR 250 million, including EUR 150 million for the provision of fresh fruit and vegetables in schools and EUR 100 million for milk.

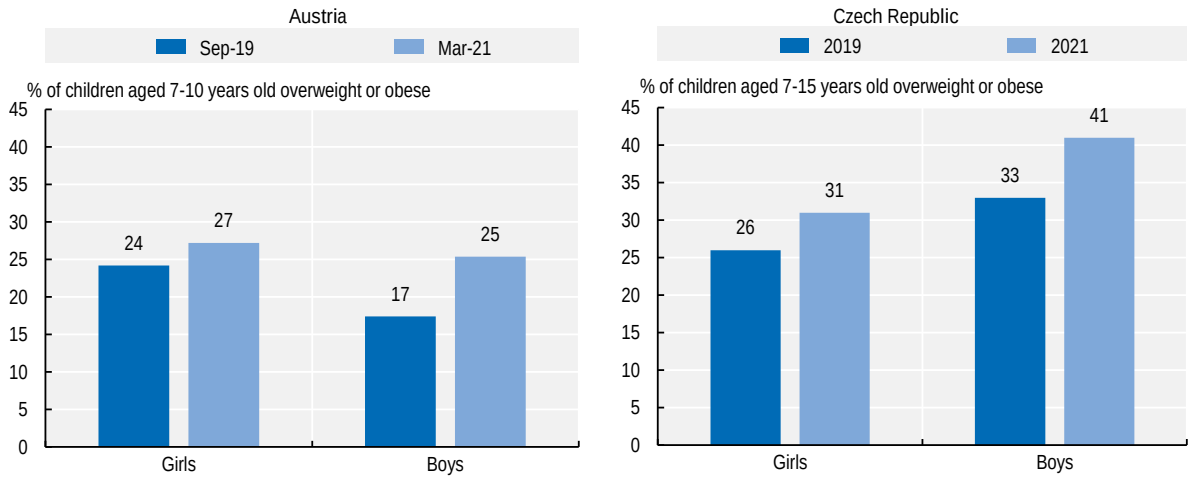
Source: European Commission (2021[75]), https://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=10024&furtherNews=yes.

1.9. The COVID-19 crisis made childhood overweight and obesity worse in many countries

The combination of lower physical activity and a worsening of nutrition habits amongst many children and adolescents during the pandemic led to at least a temporary increase in overweight and obesity rates in countries with available data. Not only more children and adolescents became overweight, but those already overweight or obese gained weight. All age groups were affected.

In Germany, the prevalence of obesity increased from 13.2% to 14.6% among the 6-12 year-olds and from 18.5% to 18.9% among the 12-18 year-olds during the first three months of the pandemic (Vogel et al., 2021[76]). In Croatia, among the 10-15 year-olds, the prevalence of overweight increased from 14.5% before the first lockdown in 2020 to 17.2% during the lockdown, and the prevalence of obesity also increased slightly from 6.4% to 6.9% (Kenđel J et al., 2021[77]). In Austria, the proportion of children aged 7-10 years old overweight or obese increased to 26.2% in March 2021, up from 20.7% in September 2019 (Figure 1.18) (Jarnig et al., 2022[78]). In the Czech Republic, the share of overweight and obesity among the 7-15 year-olds increased to 41% among boys and 31% among girls in 2021, up from 33% and 26% respectively in 2019 (Vážná et al., 2022[79]).

Figure 1.18. In Austria and the Czech Republic, overweight and obesity among children was higher in 2021 than before the pandemic



Note: Measured overweight and obesity. In the Czech Republic, data refer to the unweighted average of children aged 7, 9, 11, 13 and 15 years old.
Source: Jarnig et al. (2022[78]), https://doi.org/10.1111/ijpo.12890; Vážná et al. (2022[79]), https://doi.org/10.3390/ijerph191911902.

StatLink https://stat.link/yn1opd

The childhood overweight and obesity "epidemic" was already a major public health concern before the pandemic in virtually all EU countries: nearly one in five (19%) of adolescents aged 15 years were overweight or obese on average across 26 EU countries in 2017-18, up from one in six (16%) in 2009-10 (OECD/European Union, 2020[80]).

1.10. Conclusions

Alongside the millions of people directly affected by tragic losses of life and life-threatening illness during the pandemic, many more have been profoundly affected by the closures of schools and workplaces, disruptions to public services, and serious constraints on social contact that would hitherto have seemed unimaginable. Particular concerns have been raised for the health and well-being of the millions of young people whose formative years have been marked by prolonged periods of fear, social isolation, uncertainty and disruption. This chapter finds that those concerns are well-founded.

The pandemic and the measures implemented to contain it fuelled an unprecedented worsening of population mental health, with the prevalence of symptoms of depression amongst young people (18-29) more than doubling in several European countries. Young people in precarious financial circumstances and young people at risk of exclusion were at particularly high risk of mental distress. Moreover, there are signs that the pandemic accelerated a worsening of – and potentially a growth in – symptoms of eating disorders in some countries.

Young people's mental health fluctuated with the pandemic, with symptoms of anxiety and depression typically highest around pandemic "peaks", when infection and/or death rates were high. The mental health and well-being of young people (18-29) has generally improved slightly in European countries with available data as the pandemic situation has improved (in the first half of 2022), though the share of young people with symptoms of anxiety and depression remain double that of pre-pandemic levels in some countries. Ongoing elevated mental distress could reflect the emergence and confluence of multiple crises, such as Russia's war of aggression against Ukraine, the cost-of-living crisis, and the climate crisis.

The pandemic has challenged already-stretched mental health care services, with waiting times increasing in some countries. Around one in two young people in the EU reported unmet needs for mental health care in the spring of 2021 and 2022, rates over double those of the general adult population. While the long-term implications of the pandemic on the need and demand for mental health care are yet to be seen, the pandemic has brought a new urgency to mental health prevention and promotion measures, and to ensuring that adequate support is available to those who need it.

The physical health impacts of the pandemic have also been significant. Physical activity amongst children and adolescents declined in almost all European countries with available data, particularly amongst older adolescents. Significantly more time was spent sitting and watching screens. Food consumption at home increased in many European countries, but it is not always clear whether food choices were healthy ones. The closure of schools meant that many children and adolescents lost access to free and healthy meals.

European countries have taken action to mitigate the impacts of the pandemic on young people, but given the magnitude of the impacts, further action is needed.

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Annex 1.A. Measuring mental health and well-being: A brief overview of survey instruments

This chapter reports indicators of mental health and well-being based on different survey instruments, which are briefly reviewed below.

Generalised Anxiety Disorder-7 (**GAD-7)** is a survey instrument commonly used to measure symptoms of anxiety. It is a seven-item questionnaire with a series of questions about the frequency with which respondents have experienced a range of negative symptoms over the past two weeks, such as "feeling nervous, anxious or on edge," or "not being able to stop or control worrying." Each response is assigned a score on a 4-point Likert scale, from 0 to 3 (0 = not at all, 1 = several days, 2 = more than half the days, 3 = nearly every day). All items are added together to calculate a total score, with a score of 10 or above typically used to indicate anxiety (with 0-4 indicating minimal symptoms, 5-9 mild, 10-14 moderate, and 15-21 severe symptoms of anxiety).

Patient Health Questionaire-8 and 9 (**PHQ-8** and **PHQ-9)** are shortened versions of the **Patient Health Questionnaire** (**PHQ**) and are used to measure the presence and severity of symptoms of depression.

- **PHQ-9** is a nine-item questionnaire with a series of questions about the frequency with which respondents have experienced a range of negative symptoms over the past two weeks, such as "little interest or pleasure in doing things," or "feeling down, depressed or hopeless." Each response is assigned a score on a 4-point scale from 0 (not at all) to 3 (nearly every day), in the same way as GAD-7. **PHQ-8** is the same as PHQ-9, but removes a question about suicidal ideation (typically because it is considered too sensitive).
- There are two ways in which responses are typically scored: via an algorithm-based approach with classifications of "major depression" or "other depression"; or by adding the scores and applying different "cut-off" points for the severity of depression:
  - The "algorithm diagnosis" is aligned to definitions contained in the Diagnostic and Statistical Manual of Mental Disorders (DSM). Respondents have to report experiencing two specific symptoms – "little interest or pleasure in doing things," or "feeling down, depressed or hopeless" – for more than half the time in the preceding two weeks. Respondents are categorised as having symptoms of "major depressive" or "other depression" if they also report a number of other symptoms (there are 6 to 7 others, depending on whether PHQ-8 or PHQ-9 is used): "Major depression" is when respondents also answer at least "more than half the days" to 5 or more of the other questions; or "other depression" is when respondents answer at least "more than half the days" to 2 to 4 other questions. The measure "any depression" (a combination of "other" and "major" depression) is typically used in this chapter where data have been scored using the algorithm diagnosis.
  - In the "cut-off" approach, all of the scores are simply added together to provide a final score which indicates the severity of depression, ranging from 0-24 for the PHQ-8 and 0-27 for the PHQ-9: 0-4 none, 5-9 mild depression, 10-14 moderate depression, 15-19 moderately severe depression, 20-24/27 severe depression. A score of ≥10 is typically used to indicate moderate to severe symptoms of depression.

The **WHO-5 Well-being Index** (**WHO-5)** is a questionnaire used to measure subjective well-being. It contains five questions about the frequency with which respondents have experienced a range of positive symptoms over the past two weeks, such as having felt "cheerful and in good spirits," and "calm and relaxed." The final score is calculated by summing the raw scores and multiplying them by 4. Respondents with a score of 50 or lower (out of 100) are sometimes considered to be at risk of depression.

The **Hospital Anxiety and Depression Scale** (**HADS**) is a 14-item survey with the first seven items on anxiety (HADS-A) and the latter seven on depression (HADS-D). The survey has a four-point scale for each item and total scores can range from 0 to 21.

The **Mental Health Inventory-5** (**MHI-5)** contains five questions on the extent to which respondents experienced a range of positive and negative symptoms over the past four weeks, such as feeling nervous or feeling happy. Each response is assigned a score on a 6-point Likert scale ranging from 1 to 6. The overall score is converted to a score between 0 (psychologically unhealthy) and 100 (perfect mental health).

2 Dealing with backlogs: Disruptions in non-COVID care during the pandemic

This chapter reviews the impact of the COVID-19 crisis in disrupting care for non-COVID patients, focusing on primary care, mental health care, cancer care, chronic care and elective surgery during the first year of the pandemic. While the rapid development of teleconsultations played an important role in maintaining continuity of care, disruptions in cancer screening programmes resulted in delays in diagnoses and led to increased number of cancer patients diagnosed at later stages. The pandemic also impacted the mental health of EU citizens, disproportionately affecting young people, women and the unemployed. One in five EU citizens reported unmet mental health care needs in 2021 and 2022. The suspension of activities during the first year of the pandemic resulted in one in six elective surgery being missed. Many countries provided additional funding to address the backlog of patients, but the biggest constraint to increasing surgical activities has been workforce availability. This chapter draws lessons from the pandemic to build more resilient health systems.

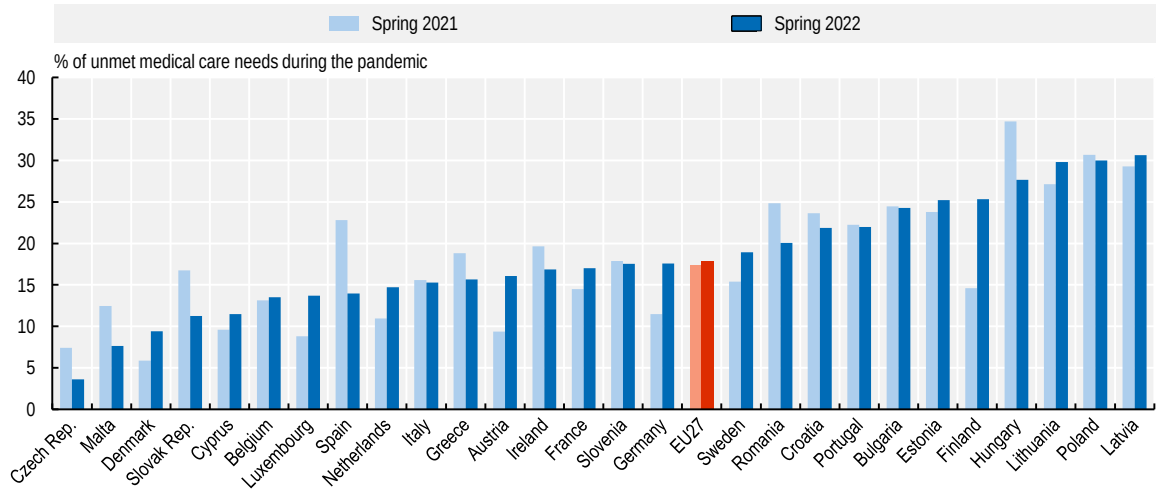
2.1. Introduction

The COVID-19 pandemic has had a dramatic impact on people's lives in Europe and around the world. It has led to a reduction of more than a year in life expectancy in the EU in 2021 compared with 2019. These were the largest reductions in life expectancy since World War II in most EU countries. By the end of October 2022, more than 1.1 million COVID-19 deaths (or 17.5% of world's total deaths) had been reported across the 27 EU countries, but data on excess mortality suggests this is an under-estimation and that an additional 300 000 people died from either the direct or indirect effect of the pandemic (see indicator "COVID-19 mortality and excess mortality" in Chapter 3).

The pandemic has had a huge impact on most people's lives also through the disruptions of educational, economic and social activities. In health, the pandemic led to major disruptions in many health services. The overall impact of these disruptions is hard to quantify precisely because they have affected most of the population and because several of these effects will last for many years to come. For example, disruptions in cancer screening and early detection programmes will result in increased number of cancer cases being diagnosed at a later stage, and with lower survival probabilities. Increased levels of psychological distress experienced during the pandemic are also expected to have a long-lasting impact on the mental health condition and trajectory of many EU citizens.

A large proportion of EU citizens reported high unmet health care needs from the start of the pandemic as countries mobilised health care resources to respond to the pandemic urgency and as the population was encouraged to reduce physical and social contacts to contain virus transmission. According to Eurofound's *Living, working and COVID-19 e-survey* (Eurofound, 2022[1]), more than one in five people across EU countries reported having forgone medical care (i.e. a medical examination or treatment) during the first 12 months of the pandemic, and nearly one in five people reported that they were still having current unmet medical care needs in spring 2021 and spring 2022 (Figure 2.1).

Figure 2.1. Unmet health care needs have remained high during the first two years of the pandemic



Note: The survey question refers to current unmet needs at the time of the survey. The EU average is weighted.
Source: Eurofound (2022[1]), *Living, working and COVID-19 e-survey*, http://eurofound.link/covid19data.

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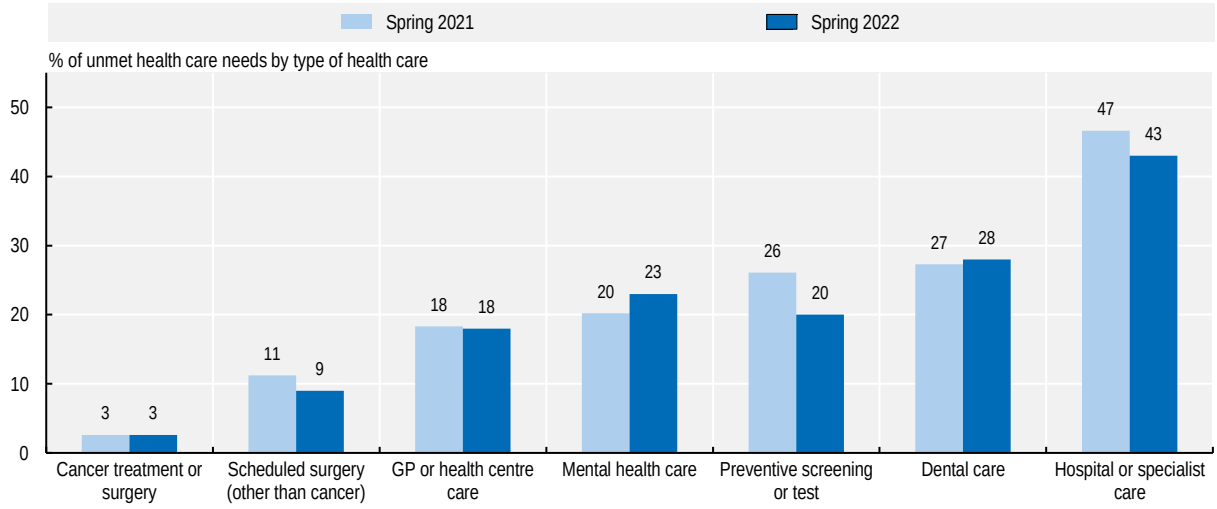
Unmet health care needs have varied for different types of care since the beginning of the pandemic but their extent has been dramatic. Overall problems with access to hospital or specialist care were reported by nearly half of the EU population in 2020 and more than two fifths in 2021. Unmet needs in the EU in 2020 and 2021 have also been high for dental care, screening, and mental health care. Compared to spring 2021, fewer unmet care needs were reported in spring 2022 for screening and for hospital and specialist care, but the situation remained unchanged for dental care and deteriorated for mental health care (Figure 2.2).

Figure 2.2. Unmet health care needs in the EU remained high in spring 2022 for most types of care and increased further for mental health care



Note: Data relate to all EU countries. The data relate to the population who reported current unmet healthcare needs.
Source: Eurofound (2022[1]), *Living, working and COVID-19 e-survey*, http://eurofound.link/covid19data.

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This chapter reviews the impact of the pandemic in disrupting primary care services, mental health care, cancer care, chronic care and elective surgery in European countries, and some of the measures that countries have taken to minimise these disruptions and resume activities as quickly as possible.

Box 2.1 provides a general definition of health system resilience and illustrates the different stages of responses to a shock like the COVID-19 pandemic.

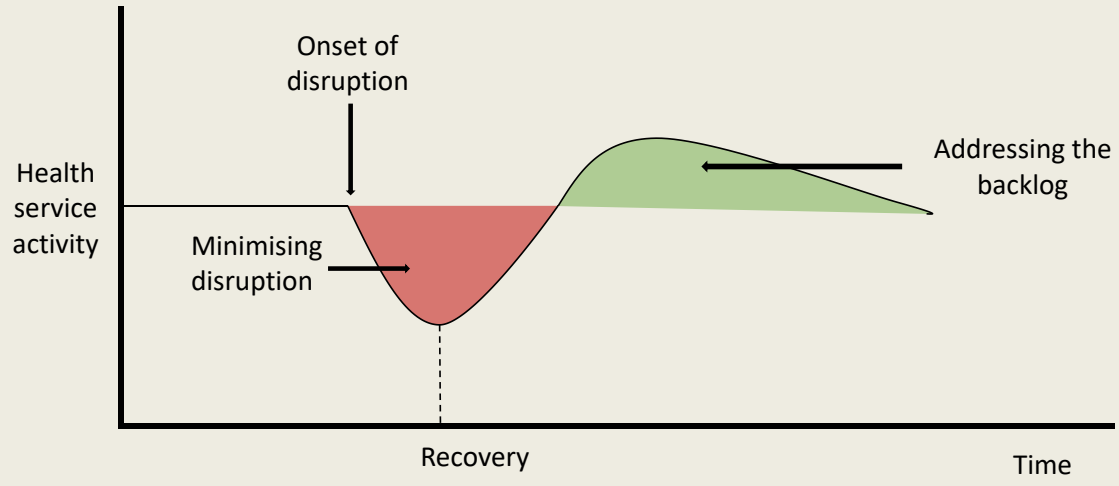
Box 2.2 summarises some of the key findings from reviewing the disruptions of different types of health services during the pandemic and the country responses to restore access to these services as quickly as possible. It also outlines some of the lessons learned from the crisis about how to strengthen the resilience of health systems to any future shocks and strains arising from population ageing.

Box 2.1. Health system resilience

Health system resilience has been defined by the EU Expert Group on Health Systems Performance Assessment as the ability to foresee, absorb and adapt to shocks and structural changes in a way that allows health system to (i) sustain required operations, (ii) resume optimal performance as quickly as possible, (iii) transform its structure and functions to strengthen the system, and (iv) (possibly) reduce its vulnerability to similar shocks and structural changes in the future (EU Expert Group on Health Systems Performance Assessment, 2020[2]). This definition is fully consistent with the OECD definition of health system resilience as the ability to prepare for shocks, absorb disruptions while maintaining performance, recover quickly, and adapt by learning lessons to improve and manage future risks (OECD, forthcoming[3]).

Figure 2.3 provides a basic illustration of the different stages of response to a shock. A shock like the pandemic results in the disruption of health services. The goal is to minimise these disruptions as much and as soon as possible to maintain adequate access to services, recover as quickly as possible to return to the pre-shock level and even exceed it to address any backlog of patients generated by the initial disruption.

Figure 2.3. Health system resilience to shocks: The stages of responses to disruptions



Source: Adapted from OECD (forthcoming[3]), *Ready for the Next Crisis? Investing in Resilient Health Systems*.

Box 2.2. Key findings and lessons learned from reviewing the disruptions of health services during the pandemic and country responses

- **Teleconsultations are useful to maintain continuity of care for many, but not all, types of consultations**: The rapid development of teleconsultations has been one of the most visible innovations in health service delivery during the pandemic and played a key role in maintaining access to care, particularly during lockdown periods. The number of teleconsultations between doctors and patients rose by 90% during the first year of the pandemic on average across EU countries, partly offsetting the reduction in in-person consultations. Some countries were better prepared to provide remote consultations because they already had put in place more advanced digital infrastructure. Many other countries moved quickly to overcome legislative, financial or technical barriers to using teleconsultations. While telemedicine undoubtedly contributed to maintaining access to care during the crisis, there is concern that some teleconsultations provide little benefits compared with in-person consultations. Access to teleconsultations and other telemedicine tools among older, poorer and people living in rural areas also remains a concern in some EU countries.
- **In addition to COVID-19 vaccination, notable progress has been achieved in increasing immunisation against influenza and maintaining childhood vaccination programmes:** The proportion of older people vaccinated against influenza increased greatly in many EU countries during the first year of the pandemic, reflecting greater confidence in the safety and importance of this vaccination. Flu vaccination rate among people aged 65+ rose from 37% in 2019 to 44% in 2020 on average across the EU, although nearly all countries still have a long way to go to achieve the target of vaccinating 75% of people in this age group. Most countries were also able to maintain high childhood vaccination rates during the first year of the pandemic, but some have faced at least some temporary challenge in implementing regular vaccination schedules in 2021. Public authorities in many countries have developed strategies to combat misinformation and disinformation about vaccines. The EU Vaccines Strategy continues to support national efforts to increase vaccination rates by accelerating the development and availability of vaccines while maintaining quality, safety and efficacy standards.
- **Disruptions in mental health care and new mental health care needs associated with the pandemic will have implications for years to come:** The pandemic had a major impact on the mental health of many EU citizens, and anxiety and depression doubled in a number of European countries. Young people, women and the unemployed were particularly affected. Many EU countries have stepped up their mental

health support to respond to growing needs, but more than one in five EU citizens reported unmet mental care needs in spring 2022. As noted in the 2022 State of the Union Address, providing appropriate, accessible and affordable support can make all the difference to the many EU citizens who feel anxious or mentally unwell.

- **Delays in cancer screening and new diagnoses have created backlogs of cancer patients diagnosed at a later stage**: Cancer screening rates fell sharply during the initial phase of the pandemic in 2020 as screening programmes were temporarily suspended and patients were hesitant to seek consultations with doctors for cancer suspicions. While many countries were able to offset at least partly the initial reductions by scaling up activities in the second half of the year, breast cancer and cervical cancer screenings fell by 6% on average in 2020. Delays in cancer screening and diagnoses have raised serious concerns as postponed diagnoses inevitably result in cancer being diagnosed at a later stage, making cancer treatment more complex and reducing survival probabilities. Strategies to prevent the accumulation of more advanced cancer patients involve minimising any disruption in screening programmes and early detection. Most EU countries still have a way to go to reach the ambitious goal set out in the Europe's Beating Cancer Plan of having 90% of the EU population who qualify for breast, cervical and colorectal cancer screenings offered screening by 2025.
- **Telemedicine, new professional roles and stronger co-ordination were needed to maintain care continuity for people with chronic conditions:** People with chronic conditions were 40% more likely to report either forgoing or postponing medical care during the first few months of the pandemic than those without a chronic condition on average across EU countries. Delayed or missing regular care for chronic conditions can have particularly detrimental effect, often resulting in greater complications for patients and putting additional pressure on hospitals. One of the strategies that countries adopted to maintain continuity of chronic care during the pandemic was to transition rapidly to remote care and monitoring. Many countries also assigned new roles to health workers: these range from increasing the role of nurses and other community health workers to provide home-based care, to allowing pharmacists to prescribe or extend prescriptions for chronic conditions. The pandemic emphasised the crucial role of better data sharing and stronger digital infrastructure to support care co-ordination. Long COVID (also known as "post COVID-19 condition") has emerged as a new chronic condition that will require further research to improve diagnosis and treatment, and will require care co-ordination between primary care providers and specialists.
- **Addressing the backlog of patients waiting for elective surgery requires funding but also more workforce**: Nearly 2 million fewer elective (non-urgent) surgical procedures were performed in 2020 compared to 2019 across the 23 EU countries for which data are available (equivalent to 16.5% of the total). On average, the number of hip replacements fell by 14% while the volume of knee replacements fell by 24%. These "missing volumes" of operations have led to longer waiting lists and waiting times, and the public dissatisfaction that goes with it. Many EU countries have taken actions to address the backlogs by providing additional funding to increase the supply of surgery. However, the main constraint in increasing rapidly the volume of activities has been the health workforce. Incentives are provided to current staff to work harder and longer hours, but this has limits and runs the risk of burnout and resignation.
- **Targeted investments, notably in health workforce, are needed to increase health system resilience**: EU countries recognised that more health system resources were required to respond to the pandemic. In 2020, health expenditure per capita increased by over 5% on average across EU countries, despite a large reduction in GDP in many countries. Some of the weaknesses and vulnerabilities identified during the pandemic, notably health workforce shortages, are high priorities in the COVID-19 recovery. According to recent OECD estimates, at least half of new investments required to make health system more resilient should be on workforce to increase both recruitment and retention by improving working conditions.
- **Health data gains during the pandemic and investments in health data infrastructures can be leveraged for evidence-based policy making:** Substantial additional investment is still needed in health data and information systems to provide more relevant support to decision-making and care co-ordination. EU countries have taken rapid actions at the beginning of the pandemic to mitigate data deficits to help them manage COVID-19 responses. In some countries, actions were also taken to monitor important "side-effects" of the pandemic, such as on mental health and the health workforce. However, many basic data gaps remain in countries' ability to provide timely data on regular health care activities, health care needs, waiting times and health outcomes. The pandemic also highlighted that further investment is needed in health data infrastructures to promote greater data linkage and data sharing across providers to enable greater care co-ordination, while at the same time protecting data privacy.

2.2. Disruptions in primary care

Strong primary care is essential for a well-functioning health system and to reduce pressures on hospitals under normal circumstances. In crisis situations like the COVID-19 pandemic, primary care can play an important role in helping to cope with a surge in demand for diagnosis and to provide at least first-line treatment, but it is also essential for primary care providers to continue to respond to all the other care needs of the population.

During the pandemic, the provision of primary care was substantially affected by restrictions in mobility and contacts that disrupted traditional ways of accessing health services. Fortunately, teleconsultations picked-up quickly in many countries and replaced at least partly in-person consultations.

The pandemic also challenged the implementation of routine vaccination programmes for children, although most countries managed to keep high vaccination rates. Many countries have also been able to increase vaccination rates against seasonal influenza among older people as part of deliberate strategies to reduce other respiratory infections among at-risk groups and additional pressures on hospitals.

Many primary care workers were called upon to perform new tasks during the pandemic. The roles of community pharmacists and nurses were extended in many countries to support COVID-19 responses but also to provide other primary care services.

2.2.1. The development of teleconsultations offset at least partly the reduction in in-person consultations

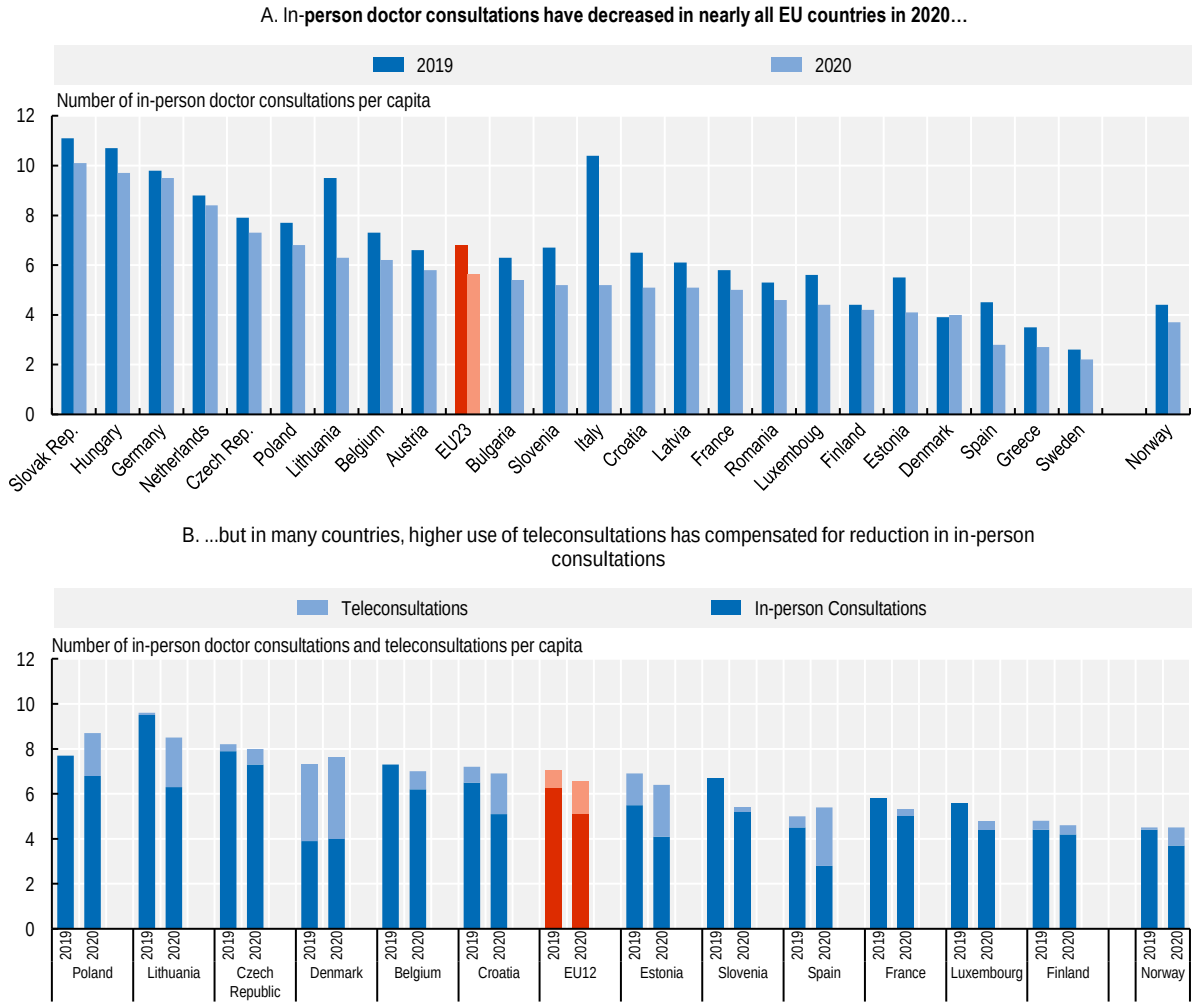
Nearly all EU countries have experienced substantial reductions in in-person consultations with doctors during the first year of the pandemic, in particular during lockdown periods. The rapid development of teleconsultations played a key role in maintaining needed patient-physician interactions and the ability to manage health problems at early stages in many countries (OECD, 2021[4]).

In-person consultations with doctors dropped in all EU countries but Denmark in 2020. For the most part, the reduction in in-person visits occurred during the first wave of the pandemic, with less pronounced disruptions in subsequent waves. Over the whole year, on average across 23 EU countries, in-person consultations decreased by 17% in 2020, ranging from a decrease of only 3% in Germany to up to 50% in Italy (Figure 2.4, Panel A).

At the same time, the number of teleconsultations increased rapidly in many countries in the early phase of the pandemic and at least partly offset the reduction in in-person consultations. On average across the 12 EU countries for which data on teleconsultations are available, the overall number of physician consultations (including both in-person and remote) decreased only by 7% in 2020 (Figure 2.4, Panel B). In some countries like Poland, Denmark and Spain, the overall number of teleconsultations and in-person consultations in 2020 in fact exceeded the number in 2019 because the increase in teleconsultations more than offset any reduction in in-person consultations.

Denmark was already far ahead all other countries before the pandemic in having a high number of teleconsultations with doctors, with an almost equal share between in-person and teleconsultations. This balance was maintained during the first year of the pandemic.

Figure 2.4. In many countries, teleconsultations compensated at least partly for the decrease in in-person doctor consultations during the pandemic



Note: Data cover consultations with all doctors (general practitioners and specialists). Data for Spain are underestimated as they only include consultations in primary health care centres of the National Health System.
Source: OECD Health Statistics 2022 (for in-person consultations) and national sources (for teleconsultations).

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Data from Eurofound's COVID-19 e-survey also show a growing use of teleconsultations with general practitioners (GPs) during the first year of the pandemic in all 27 EU countries (see indicator "Use of teleconsultations" in Chapter 8 on Resilience) (Eurofound, 2022[1]).

Before the pandemic, teleconsultations represented only a small fraction of all consultations in most countries, and the financing and reimbursement of such teleconsultations were limited (Oliveira Hashiguchi, 2020[5]). In response to the mobility restrictions during the pandemic, governments and providers moved quickly to expand remote care services. New legislations were introduced or existing laws on telemedicine were revisited in many countries. For instance, Estonia, Hungary, Ireland and Luxembourg lifted the requisite that medical consultations can only be performed in the physical presence of the patient, and Austria relaxed the same requirement on prescriptions. A few more countries allowed teleconsultations even for patients who had not consulted the health care provider in-person before, but Estonia and Luxembourg went the opposite way and the Czech Republic kept the original provision intact (OECD, forthcoming[6]).

Table 2.1. Many countries have introduced new legislations to support teleconsultations during the pandemic

Country agreement with statements before and after the start of the COVID-19 pandemic

	Medical consultations can be performed without physical presence of the patient		Teleconsultations allowed also if the patient has not previously consulted the health care worker in-person		Real-time (synchronous) teleconsultations are covered by government or compulsory financing schemes	
	Before	After	Before	After	Before	After
Austria	✓	✓	✓	✓		
Belgium	✓	✓	✓	✓	x	✓
Czech Republic	✓	✓	x	x	x	✓
Estonia	x	✓	✓	x	x	✓
Finland	✓	✓	✓	✓	✓	✓
France	✓	✓	x	✓	✓	✓
Germany	✓	✓	✓	✓	✓	✓
Hungary	x	✓	✓	✓		✓
Ireland	x	✓	x	✓	✓	✓
Latvia	✓	✓	✓	✓	x	✓
Lithuania	✓	✓	x	✓	✓	✓
Luxembourg	x	✓	✓	x	x	✓
Poland	✓	✓	✓	✓	✓	✓
Portugal	✓	✓	✓	✓	✓	✓
Slovenia	✓	✓	✓	✓	✓	✓
Sweden	✓	✓	✓	✓	✓	✓

Note: Agreement with statements is shown for both before March 2020 (i.e. before the pandemic) and after March 2020 (i.e. during the first pandemic year).
Source: Adapted from OECD (forthcoming[6]), *The COVID-19 Pandemic and the Future of Telemedicine*.

After the start of the pandemic, another significant policy change in many countries has been to allow other health workers besides doctors (e.g. nurses) to perform teleconsultations. At least five EU countries (Estonia, Germany, Hungary, Luxembourg and Portugal) and Iceland have expanded the range of health care workers that can perform teleconsultations (OECD, forthcoming[6]).

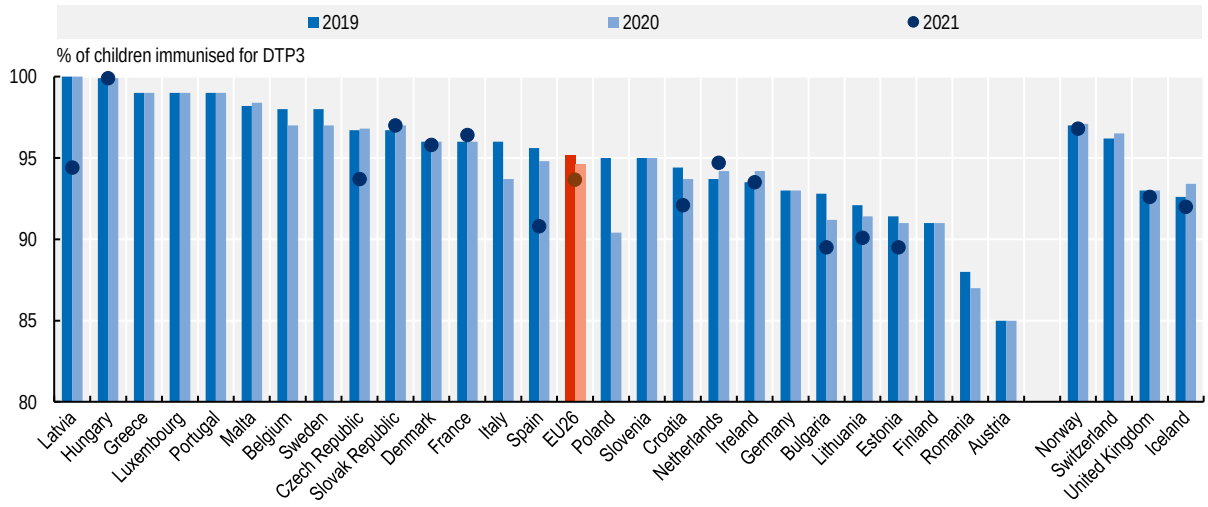
Available evaluations show that patients who used telemedicine services were overwhelmingly satisfied, and there was broad agreement on the value of remote care in maintaining access. However, physicians had more mixed views about the value and effectiveness of remote consultations and many expected to reduce or even stop providing such consultations after the pandemic (OECD, forthcoming[6]). The increased use of telemedicine has also uncovered certain limits of remote care and raised concerns that some teleconsultations constitute low value care. There is also concern that the rapid uptake of remote care during the pandemic may have exacerbated pre-pandemic inequalities in access to care. Access among older and poorer people, and people living in rural areas, remains of concern in some EU countries (OECD, forthcoming[6]). In some countries, some measures to ease telemedicine provision, for instance in reimbursements, were only temporary.

2.2.2. Most countries managed to maintain routine childhood vaccination programmes in 2020, but some countries experienced difficulties in 2021

For many years, all EU countries have had in place childhood vaccination programmes to reduce the spread of various infectious diseases, although the number and type of mandatory or recommended vaccines vary slightly across countries. Vaccination of children with three doses of the diphtheria-tetanus-pertussis vaccine (DTP3) is mandatory or recommended in all EU countries and is considered to be a robust indicator of the implementation of childhood immunisation programme. The vast majority of EU countries were able to maintain or increase the level of DTP3 immunisation among children in 2020 compared to 2019 (Figure 2.5). Two countries only – Italy and Poland – experienced a more pronounced disruption in DTP3 immunisation in 2020, with immunisation rates decreasing from 96% to 94% in Italy, and from 95% to 90% in Poland.

However, as the pandemic persisted, more countries struggled in 2021 to maintain the same high level of childhood immunisation. In over half of EU countries for which data are available, DTP3 immunisation rates dropped in 2021, with the most significant reductions in Latvia (6 percentage points reduction), Spain (4 percentage points reduction), and the Czech Republic (3 percentage points) (Figure 2.5).The reasons for the reduction in childhood vaccination in 2021 in these countries are not clear yet and may be related to temporary factors such as temporary inability to follow the childhood vaccination schedule due to COVID-19 infections, family quarantines or risky contacts. If that is the case, vaccination rates should return to pre-pandemic levels when acute phases of the pandemic are over.

Figure 2.5. Most EU countries experienced only minor disruptions to childhood immunisation rates in 2020, but some countries had difficulties maintaining high rates in 2021



Note: The rate for France in 2020 is an estimation.
Source: WHO Immunization Portal.

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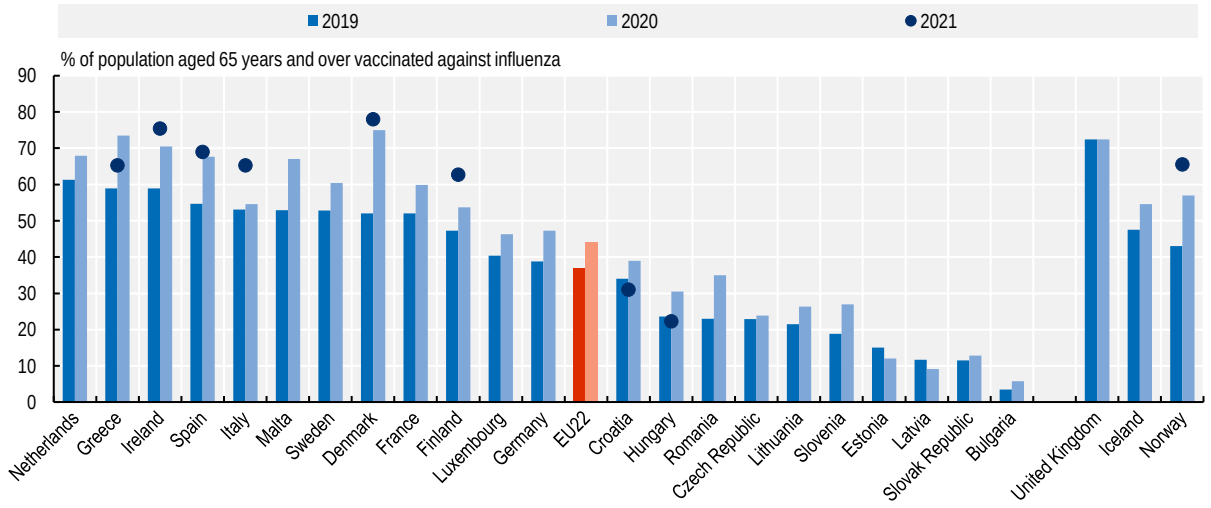
2.2.3. The pandemic has helped to increase vaccination uptake for influenza among senior people, but less so in countries that had below-average rates

One of the positive side-effects of the pandemic is that it has helped increase vaccination coverage against seasonal influenza (flu) among older people and other vulnerable groups. The overall aim of the flu vaccination campaigns in 2020 was to avoid having a flu epidemic on top of the COVID-19 pandemic. Across the 22 EU countries for which data are available, the share of older people vaccinated against flu rose from 37% in 2019 to 44% in 2020, but still varied greatly across countries (Figure 2.6).

Increased public confidence in the efficacy and safety of the flu vaccine contributed to greater vaccination coverage. The State of Vaccine Confidence in the EU 2020 survey showed that the share of respondents who strongly agreed that seasonal influenza vaccination was important rose by nearly 10 percentage points on average across EU countries between 2018 and 2020, and by over 10 percentage points for those who strongly agreed that seasonal influenza vaccination was safe. Overall, more than three-quarters (77%) of respondents considered that influenza vaccination was important and 80% that it was safe (Figueiredo et al., 2020[7]).

Countries that achieved the greatest progress in flu vaccination in 2020 were those that already had higher vaccination uptake before the pandemic. Denmark provides the most striking example: flu vaccination coverage among people aged over 65 increased by 23 percentage points in 2020 compared to 2019 to reach 75%. Greece, Ireland, Spain, Malta and Romania also managed to substantially increase flu vaccination rates among older people (by 12 to 15 percentage points). By contrast, the increase was more modest in countries that had below-average vaccination rates before the pandemic, thereby widening the gap across countries. In Estonia and Latvia, the proportion of older people vaccinated against influenza even decreased in 2020 compared to 2019 (Figure 2.6).

Figure 2.6. Senior influenza vaccination rates increased in nearly all countries in 2020, but the increase was more modest in countries that had low rates before the pandemic



Source: OECD Health Statistics 2022.

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One of the factors that influence the take-up of flu vaccination is whether the vaccine is free of charge or whether people have to cover at least part of the cost. While most EU countries provide influenza vaccination free of charge for the target populations, people needed to pay at least part of the cost in seven countries before the pandemic (Austria, Belgium, Bulgaria, Estonia, Latvia, Poland and Slovenia) (Rechel, Richardson and McKee, 2018[8]). In most of these countries where co-payment is required, influenza vaccination rates were among the lowest in the EU before the pandemic and the positive effect of greater public confidence in vaccination in 2020 did not materialise.

In some countries, the number of available vaccines in stock limited flu vaccination coverage in autumn 2020. This is the because the purchase of influenza vaccine doses was made in pre- or early pandemic time, based on historical vaccination rates, hence some countries did not have enough doses.

2.2.4. Community pharmacists and nurses were called upon to perform new tasks during the pandemic

The roles of community pharmacists and nurses were expanded during the pandemic not only to address COVID-19 related needs like testing and vaccination, but also to respond to other non-COVID care needs (OECD, 2021[4]). In several countries, pharmacists were provided new or additional authorisations, including temporary or permanent permissions to renew or extend prescriptions (e.g. Austria, Ireland, Portugal, France, the Netherlands) and to order laboratory tests (e.g. certain areas in the Netherlands) (de Bienassis et al., 2022[9]). In many countries (e.g. Belgium, France, Germany, Ireland, Italy, Portugal), community pharmacists were also granted expanded roles in dispensing and administering seasonal flu vaccination, which contributed to increasing vaccination rates among older people and other target groups (PGEU, 2021[10]).

Several countries also expanded the role of community nurses, including in administering COVID-19 and flu vaccinations. Some countries took the opportunity to establish more firmly new advanced roles for nurses. For example, Italy formalised the role of “family and community nurses” in May 2020 as a new type of advanced practice nurse to strengthen home-based care and support the activity of new special units for continuity of care (*Unità Speciali di Continuità Assistenziale,* USCAs). The Italian Government allocated EUR 480 million to hire some 9 600 family and community nurses in 2021 (Government of Italy, 2020[11]).

The expanded roles of community pharmacists and nurses during the pandemic have helped counter the shortage of general practitioners in many countries or regions, and maintain care continuity.

2.3. Disruptions in mental health care

The pandemic has led to growing unmet needs for mental health care, as the needs for mental health services increased for both mild and more severe mental health issues while the supply of services remained limited and disrupted during the peak phases. The challenges with accessibility to mental health care are not new and previous OECD work found that a large proportion of people seeking mental health care reported difficulties obtaining it before the pandemic (OECD, 2021[12]). The pandemic has simply exacerbated these challenges.

The mental health of the population has been affected during the pandemic both by the fear of being infected and by the imposed confinement measures, social isolation and economic uncertainty, leading to increased prevalence of depression and anxiety in the population across all age groups. As the pandemic evolved, people's mental health fluctuated with the intensity of the infection surge and with the strictness of the confinement measures (see Chapter 1 for a discussion focusing in particular on mental health issues among adolescents and young adults).

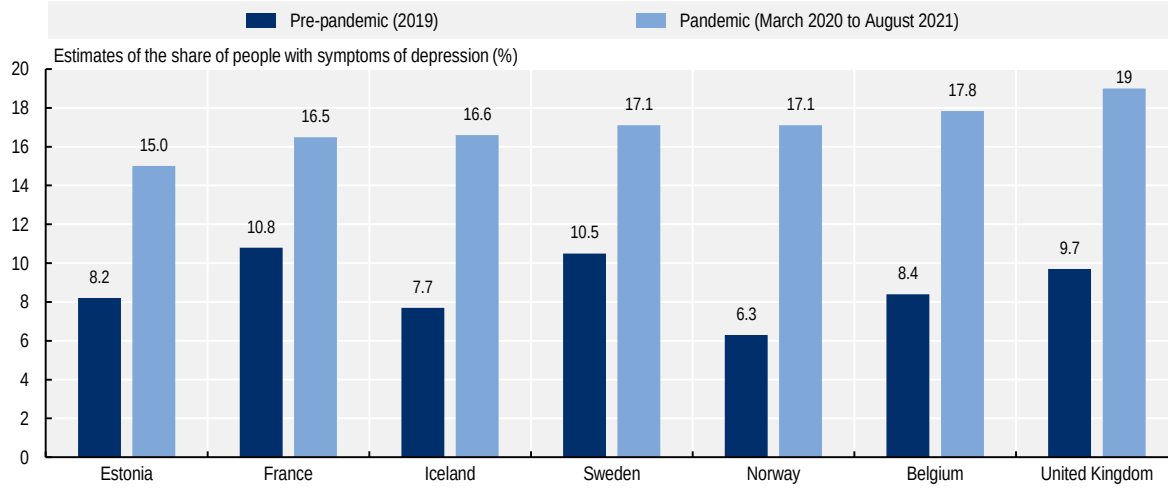
Mental health care services were disrupted at all levels, with hospitalisations decreasing and many in-person consultations cancelled or postponed, particularly during the early stages of the pandemic. Many countries swiftly moved to remote mental health care services to ensure care continuity, but disruptions were nonetheless significant.

Unmet needs for mental health care have been on the rise during the pandemic with 23% of adults reporting some unmet needs for mental care in the EU in spring 2022, up from 20% in spring 2021 (Eurofound, 2022[1]), albeit with wide variation across countries. In response, EU countries have taken actions to increase mental health support, such as developing new mental health information channels, increasing entitlement to mental health services, and providing more funding to support the availability and use of these services.

2.3.1. Population mental health worsened over the course of the pandemic

The pandemic has had an extraordinary impact on mental health across Europe. The direct and indirect impacts of the pandemic have heightened the risk factors for poor mental health and weakened many of the protective factors, leading to a significant worsening of population mental health (OECD, 2021[13]). While comparable data remains scarce, national estimates of the prevalence of depression show that prevalence of symptoms of depression during the pandemic was double the pre-pandemic levels in a number of European countries (Figure 2.7).

Figure 2.7. Symptoms of depression were double those of pre-pandemic levels in a number of European countries



Note: Pandemic prevalence estimates are pooled averages from longitudinal or repeated national surveys up to August 2021. Cross-country comparability is limited due to the variation in number and timing of national surveys. Symptoms of depression are measured using PHQ-8 or PHQ-9, except for France and Estonia. Symptoms of depression in France during the pandemic are measured using HADS-D, leading to lower estimates compared to other countries. Some pre-pandemic and pandemic country data use different scoring methods, potentially underestimating the increase in symptoms. A full explanation of the survey methodology and scoring methods is contained in the Annex to Chapter 1.
Source: For 2019, Eurostat EHIS data (2021[14]) and Office for National Statistics (2022[15]) for the United Kingdom. For 2020/2021, Santé publique France (2022[16]) for France, Sciensano (2022[17]) for Belgium, Unnarsdóttir et al. (2021[18]) for Iceland, Norway and Sweden, and Office for National Statistics (2021[19]) for the United Kingdom.

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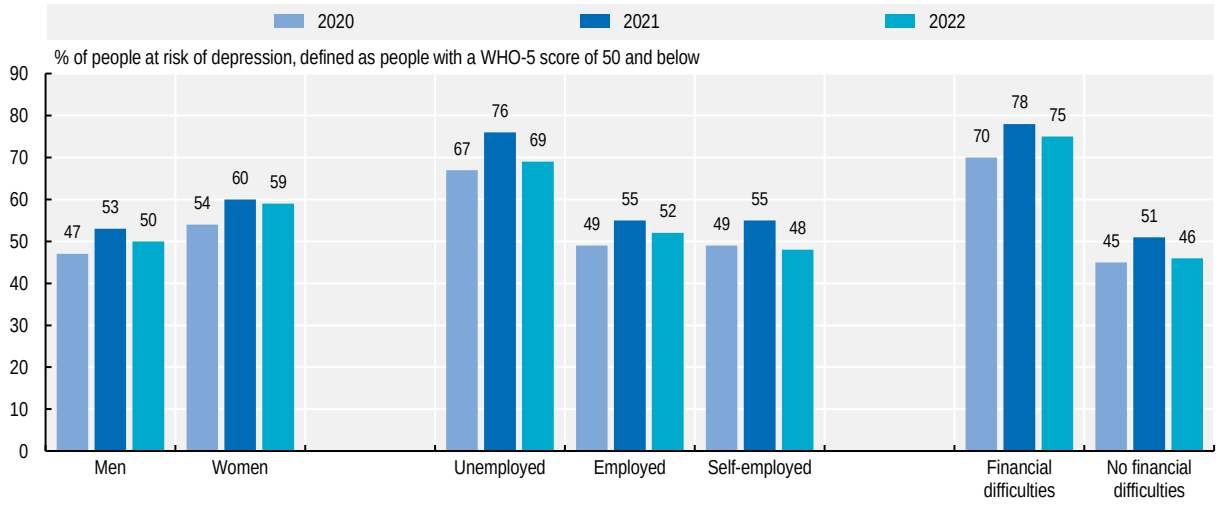
Population mental health fluctuated with the intensity of the pandemic and with the measures to contain it. In European countries which conduct regular surveys on population mental health status such as Belgium and France, data show that the prevalence of depression has tended to be highest when COVID-19 infection and death rates were high and confinement measures were strictest (Sciensano, 2022[17]; Santé publique France, 2022[16]).

Inequalities in mental health and well-being have persisted – and in some cases widened – over the course of the pandemic. Data from Eurofound's *Living, working and COVID-19 e-survey* indicate that the risk of depression has generally been higher among young people (see Chapter 1), women, the unemployed and people facing financial difficulties (Figure 2.8).

Figure 2.8. The proportion of people at risk of depression during the pandemic was higher among women, the unemployed, and people facing financial difficulties



Source: Eurofound (2022[1]), *Living, working and COVID-19 e-survey*, http://eurofound.link/covid19data.

Growing mental distress led to an increase in the demand for mental health care in a number of countries. General practitioners in France reported more frequent requests for mental health care in the spring of 2020, along with a sharp increase in the use of antidepressants especially for first-time users (Bergeat et al., 2021[20]). Similarly in Finland, a 2020 survey indicated that higher psychological distress for some groups of population had transposed into higher use of mental health services (Finnish Institute for Health and Welfare, 2021[21]).

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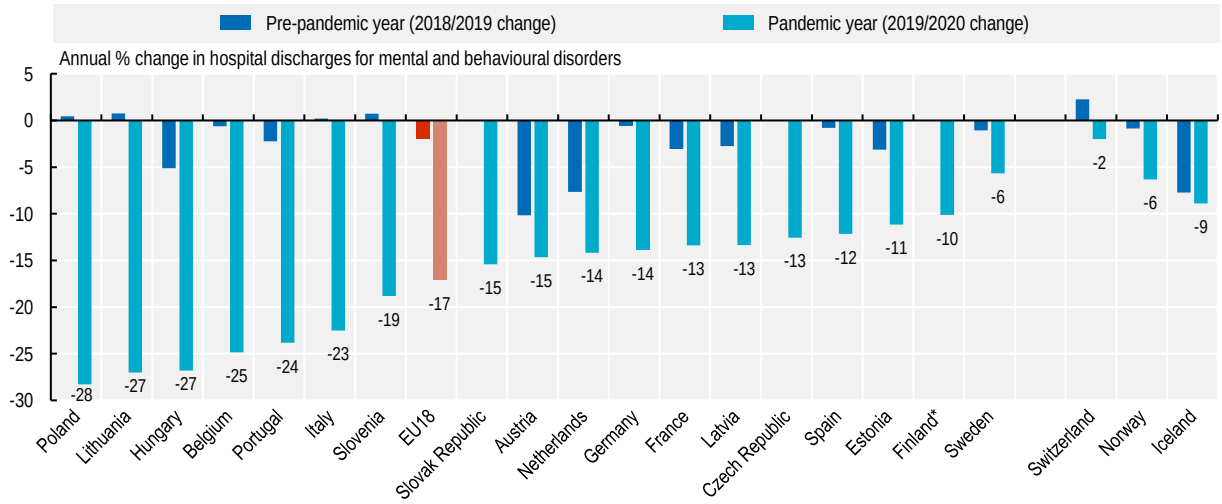
2.3.2. Mental health services were heavily disrupted, particularly at the beginning of the pandemic

Mental health services were disrupted during the pandemic, affecting service delivery in inpatient as well as outpatient settings. On average across EU countries, hospital admissions for mental and behavioural disorders fell by 17% in 2020 compared to pre-pandemic levels (Figure 2.9). In one-third of EU countries for which data are available, hospital stays for mental and behavioural disorders decreased by almost a quarter or more. Discharges for mental and behavioural disorders had already been decreasing in some countries prior to the pandemic due to efforts to de-institutionalise mental health care and shift service provision to the community, but the reduction in discharges in 2020 was much more pronounced than in preceding years.

Figure 2.9. Use of inpatient mental health services has been disrupted in most countries



Note: Data for the Netherlands include general and university hospitals only. * The pre-pandemic data for Finland relate to 2017/2018.
Source: OECD Health Statistics 2022.

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The lower number of mental health-related inpatient stays created additional pressure on outpatient services as patients were kept away from hospitals. In normal times, decreasing mental health discharges may be seen as a favourable development if this is associated with greater community-based support and outpatient services. However, during the pandemic years, the large reduction in hospital stays was not compensated by greater community support, as reflected by high unmet mental health care needs and reductions in outpatient consultations. Based on a survey from the European Psychiatric Association (EPA), the number of patients treated by psychiatrists in outpatient settings halved in April 2020 compared to previous months (Rojnic Kuzman et al., 2021[22]). In the Netherlands, during the first wave of the pandemic, the number of referrals to mental health care fell by 25% to 80%, the demand for treatment dropped by 10% to 40%, and bed occupancy dropped by 9% (GGZ Nederland, 2020[23]).

Service disruptions appear to have eased following the first wave of the pandemic, to varying degrees and speed across countries. The WHO's second global pulse survey from early 2021 found that globally 47% of countries reported continued disruptions to mental health care services, down from 65% in the third quarter of 2020, and the third wave of this WHO survey in the last quarter of 2021 still noted continued disruptions to services for mental, neurological and substance use disorders (WHO, 2022[24]). Similarly, the second wave of the European Society for Child and Adolescent Psychiatry (ESCAP) survey of the heads of child and adolescent psychiatry in Europe (Revet et al., 2021[25]), conducted in February/March 2021, reported continued disruptions to mental health care services for children and adolescents, albeit to a lesser extent than during the first survey wave (see Chapter 1 on youth health).

2.3.3. The pandemic has accelerated the use of telemedicine in mental health care and spurred a flurry of new measures to improve mental health

Many countries swiftly moved to remote mental health care services (online and by telephone) to ensure care continuity. National psychiatric associations in Europe responded rapidly to the first COVID-19 wave and issued recommendations already in March 2020 to shift where possible towards remote psychiatric care (Rojnic Kuzman et al., 2021[22]). The use of telemedicine was not restricted to psychiatric care only but also involved psychotherapists. In mid-2020, worldwide, more than 80% of high-income countries reported to the WHO survey that they had used telemedicine and online therapy to replace in-person mental health consultations (WHO, 2020[26]).

The move towards higher use of remote consultations helped to maintain care continuity for those experiencing mental distress during the pandemic and holds real potential to increase accessibility. However, it may also represent a new barrier specifically for people with less means or competencies to access digital communication (Rojnic Kuzman et al., 2021[22]). Teleconsultations in mental health care also create new challenges, such as ensuring privacy, equity and efficiency of digital services.

Many EU countries have also taken other steps to increase mental health support. Most countries developed new mental health information and/or phone support lines giving tips on coping measures during the COVID-19 crisis, while many countries also scaled up prevention and promotion efforts and increased entitlement to mental health services and funding for these services (OECD, 2021[13]). For instance, Portugal set up a free phone line with 24-hour psychological support. France introduced free consultations with a psychologist or psychiatrist for university students. Ireland provided additional funding of EUR 50 million in 2021 to create new mental health services in response to the crisis and provide additional support for existing mental health needs (OECD, 2021[13]). Similarly, Latvia increased funding for mental health specialists and family doctors providing mental health support. In the Czech Republic, most statutory health insurance funds introduced partial reimbursement for psychotherapy opened to all their beneficiaries. In Lithuania, an action plan in response to COVID-19 was developed in 2020 to strengthen the provision of mental health care and mitigate potential negative consequences of the pandemic (Box 2.3).

Box 2.3. **Lithuania's COVID**-19 Mental Health Action Plan

The Action Plan to reduce the long-term negative consequences of the COVID-19 pandemic on mental health in Lithuania sets out a series of measures to expand and adapt existing services, introduce new services such as psychological community crisis teams, and increase the availability of mental health promotion services. The Plan contains a number of cross-sectoral measures to bolster the provision of mental health care across health, education and social services, around a number of key priorities, including: raising public awareness of mental health issues through communications; expanding access to support for those with mental ill-health, notably by increasing the number of psychologists and through the development of telehealth services; strengthening the competencies and support available to health professionals and specialists in mental health; supporting the population who suffered trauma or loss during the pandemic; strengthening mental health in schools and for older people; and bolstering the monitoring of public mental health.

Source: Wijker, Sillitti and Hewlett (2022[27]), "The provision of community-based mental health care in Lithuania", https://doi.org/10.1787/18de24d5-en.

The medium to long-term impacts of the pandemic on the need for mental health services remain to be seen. There are some indications that mental health and well-being improved in the first few months of 2022, but signs of poor mental health and well-being remain high, and the limited available national data show higher symptoms of depression and anxiety among adults than before the pandemic (Sciensano, 2022[17]; Santé publique France, 2022[16]). As pointed out in the 2022 State of the Union Address, providing appropriate, accessible and affordable support can make all the difference to the many EU citizens who feel anxious, depressed or mentally not well (European Commission, 2022[28]).

2.4. Disruptions in cancer care

The impact of COVID-19 on delays in cancer screening, diagnosis and treatment has been substantial in all EU countries, though to varying degrees. The timeliness of screening, early diagnosis, and adequate treatment is essential in fighting cancer, as stressed under the Europe's Beating Cancer Plan (European Commission, 2021[29]). The disruptions in cancer screenings and treatments in 2020 added another challenge for member countries in moving towards achieving the goals set by the plan (Box 2.4).

Box 2.4. Europe's Beating Cancer Plan

The Europe's Beating Cancer Plan, launched in February 2021, is structured around four key action areas with 10 flagship initiatives and multiple supporting actions:

1. **Prevention** through actions addressing key risk factors such as tobacco (with the aim to ensure that less than 5% of the population uses tobacco by 2040), harmful alcohol consumption, environmental pollution and hazardous substances, and to promote healthy diets and physical activity. To prevent cancers caused by infections, the Cancer Plan's objective is to vaccinate against HPV at least 90% of the EU target population of girls and to significantly increase the vaccination of boys by 2030.
2. **Early detection** of cancer by improving access, quality and diagnostics and support Member States ensuring that 90% of the EU population who qualify for breast, cervical and colorectal cancer screenings are offered screening by 2025.
3. **Diagnosis and treatment** through actions to ensure better integrated and comprehensive cancer care and addressing unequal access to quality care and medicines. By 2030, 90% of eligible patients should have access to National Comprehensive Cancer Centres linked through a new EU Network.
4. **Improving quality of life** of cancer patients and survivors, including rehabilitation, potential tumour recurrence, metastatic disease, and measures to support social integration and re-integration in the workplace.

Source: European Commission (2021[29]), Europe's Beating Cancer Plan, https://health.ec.europa.eu/system/files/2022-02/eu_cancer-plan_en_0.pdf.

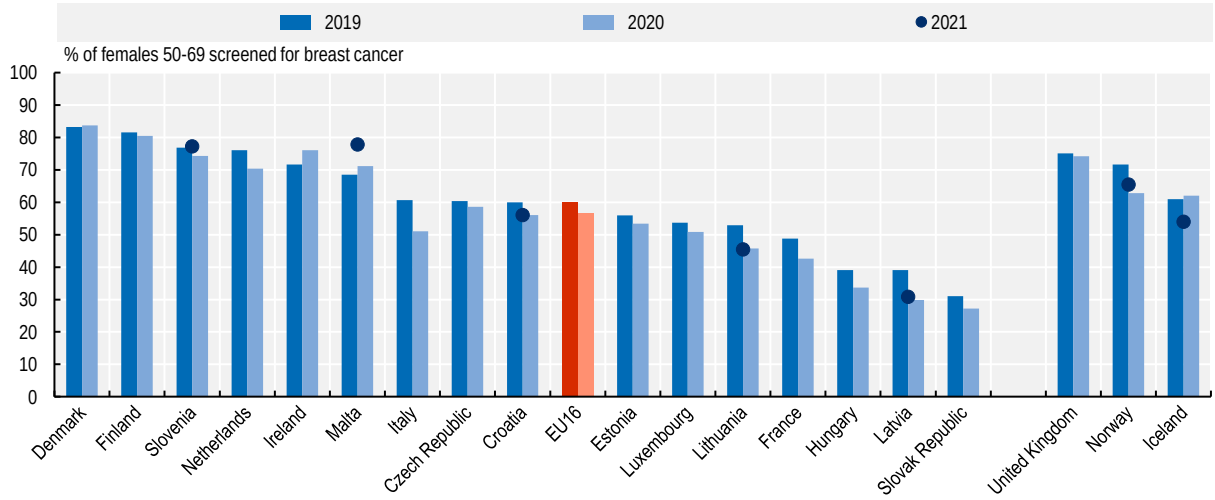
2.4.1. Disruptions in cancer screening programmes challenged early cancer detection, particularly during the first wave of the pandemic

Cancer screenings are crucial for early detection and timely start of treatment. Cancer screening programmes were stopped in 12 out of 15 EU countries in the initial phase of the pandemic, and many people were also hesitant to consult a doctor to avoid being infected. Fortunately, in most countries screening programmes were only suspended for a few weeks ((Webb et al., 2022[30])), and this was followed by increased uptakes during the rest of 2020 (Fujisawa, 2022[31]).

Breast cancer screening rates decreased in most EU countries in 2020, with an average reduction of 6% across 16 EU countries with available data (Figure 2.10). The reduction was generally greater in those countries that already had low rates before the pandemic. Denmark, Finland and Ireland are among the few countries that did not suspend their cancer screening programmes in 2020, and as a result did not experience significant drop in breast cancer screening. Indeed, Denmark and Ireland managed to increase at least slightly their breast cancer screening rates in 2020.

Data for 2021 are only available for a few countries and show a mixed picture: in some countries (Latvia, Lithuania and Croatia), breast cancer screening rates remained at the same level as in 2020 and lower than before the pandemic, while in Slovenia they returned to their pre-pandemic level. In Malta, screening rates continued to increase above the pre-pandemic level to reach nearly 80% in 2021.

Figure 2.10. Breast cancer screening rates dropped in most countries in 2020, but more in countries that had lower pre-pandemic screening rates



Note: The data generally refer to women aged 50-69 who have received a mammography screening over the past two years, although the specific age groups and frequency may vary across national programmes. Data for Denmark refer to 2018 instead of 2019.
Source: OECD Health Statistics 2022.

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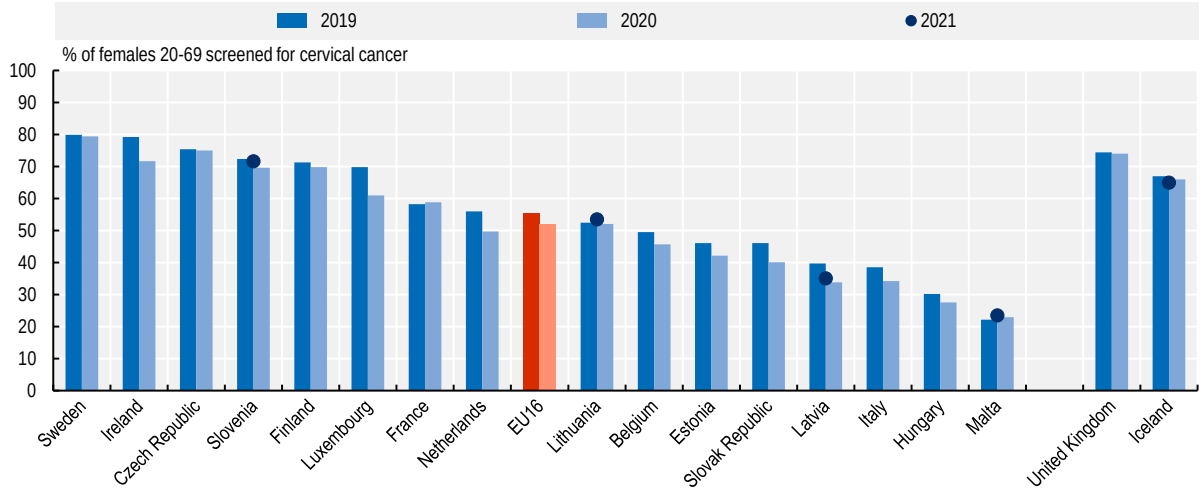
Cervical cancer screening also went down in most EU countries in 2020, with an average reduction of 6% compared to 2019. Some countries such as Italy, Latvia, Luxembourg, the Netherlands and the Slovak Republic saw a reduction of over 10% in cervical cancer screenings in 2020 (Figure 2.11).

Figure 2.11. Cervical cancer screening rates decreased in most countries in 2020



Note: The data generally refer to women aged 20-69 who have been screened for cervical cancer over the past three years, although the specific age groups and frequency may vary across national programmes.
Source: OECD Health Statistics 2022.

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The sharp reduction in cancer screening in many countries during the first half of 2020 was partly offset by a quick recovery in the later months of 2020. This signals the high policy priority given to cancer screenings in many countries. It also reflects the ability of providers to scale up screening activities to catch up with missed screenings during the first part of 2020. Some countries (e.g. the Netherlands) developed alternatives to office-based screening to reduce people's hesitancy by sending out self-sampling devices for cervical cancer screening that were previously found effective (Fujisawa, 2022[31]).

Nonetheless, the number of undiagnosed cancers during the first half of 2020 was substantial and has or will result in a greater number of people diagnosed at a later stage. Austria experienced a strong decline in newly diagnosed gynaecological tumours following the 2020 spring lockdown. The tumours not detected were those in early stages with the best potential clinical treatment outcome. Indeed, the share of newly diagnosed patients with more advanced tumours increased from less than half to two-thirds in mid-2020 (Tsibulak et al., 2020[32]).

In Italy also, the three national screening programmes were delayed in the period of January-May 2020 by over 2 ½ months, resulting in undiagnosed lesions estimated at 2 201 for breast cancers, 645 for colorectal carcinomas, 3 890 for advanced colorectal adenomas, and 1 497 for CIN2 or more serious lesions (Mantellini et al., 2020[33]). While all three screening programmes reduced their activities by more than 50% during the first wave of the pandemic, the overall reduction in breast cancer screening in 2020 was 16% (Figure 2.10) and 11% for cervical cancer screening (Figure 2.11). This shows that Italy was partly able to catch up with its screening backlogs in the second half of 2020, as observed in many other countries.

Similarly in Croatia, an 11% decrease in breast cancer screening in the first pandemic period (Vrdoljak et al., 2021[34]) was partly caught-up in the remaining of the year, resulting in a total decrease in breast cancer screenings by 6.7% in 2020 compared to 2019 (Figure 2.10). Newly detected cases in 2020 were 6% lower than in the previous three years, indicating that some of the foregone screenings may result in later diagnosis and less favourable treatment outcomes (Vrdoljak et al., 2021[34]).

Slovenia also paused cancer screenings in spring 2020, but resumed them in mid-May 2020 and expected that most cancer screening programmes would meet the usual targets by end of 2020 (Webb et al., 2022[30]). National authorities decided not to halt cancer screening programmes again during the second wave of the pandemic, a decision that was made possible due to better preparedness and availability of personal protective equipment (PPE) at that time (Ivanuš et al., 2021[35]). In the end, Slovenia registered only a slight reduction in breast cancer screening (-3%) and cervical cancer screening (-4%) in 2020 compared to 2019.

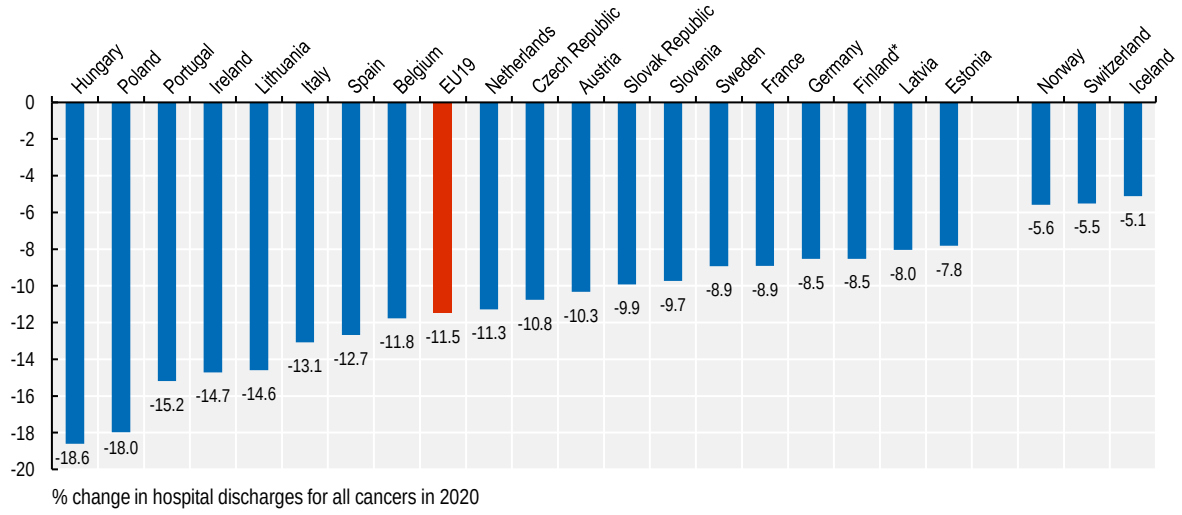
Ireland reports having screened the same number of women for cervical cancer in 2020 and 2021 as in any previous two-year period, with a 13% increase in screenings in 2021 making up for the screening decreases in 2020 (Population Health Screening Unit, 2022[36]).

2.4.2. Cancer care in hospital declined in 2020, raising concerns about timely treatment

Delayed cancer diagnoses and treatments come at high costs, both for patients and for health systems. Delaying surgical treatment for common cancers increases the risk of death by about 7%, while delaying chemotherapy or radiotherapy by four weeks increases the risk of death by up to 13% (Hanna et al., 2020[37]).

"Missing patients" for cancer care, as reflected by both lower number of hospital stays and fewer number of cancer-related operations, are in most cases related to fewer new patients entering the cancer patient pathway because of delayed diagnoses. The number of hospital stays for cancer care dropped in all EU countries for which 2020 data are available (Figure 2.12). On average, it decreased by 11.5% in 2020 compared to 2019.

Figure 2.12. Hospital discharges for all cancers dropped in 2020 compared to 2019



Note: For Ireland, data pertain only to publicly-funded hospitals; public patients treated in private hospitals are not included, which overestimates the decrease showed here. * 2018 data were used for 2019 for Finland.
Source: OECD Health Statistics 2022.

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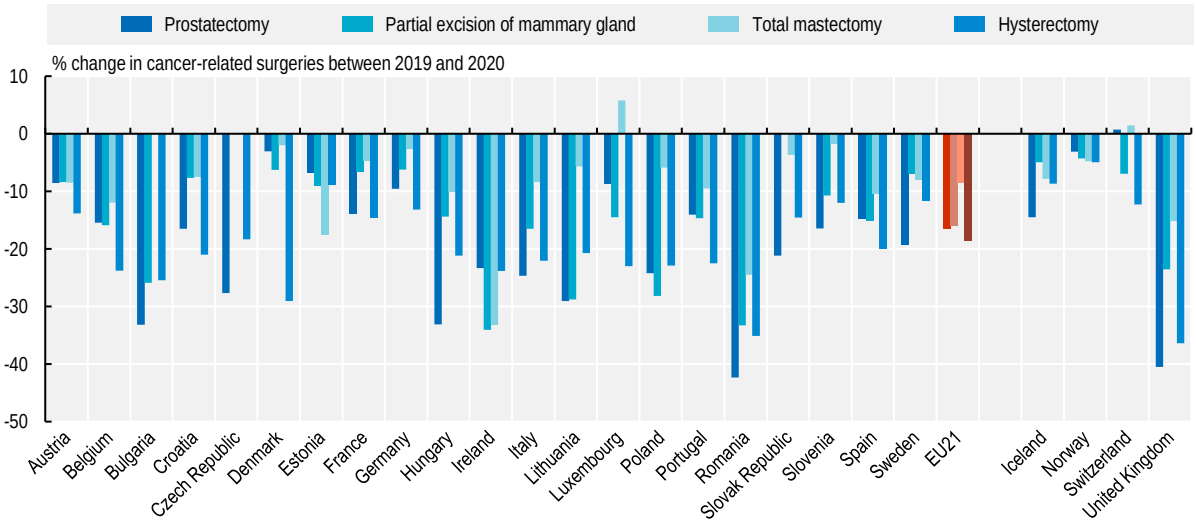
The number of cancer-related operations also decreased substantially across EU countries in 2020, though to varying extent. Depending on the operation, it fell by 10% to 20% on average (Figure 2.13).

Figure 2.13. Cancer-related surgery dropped significantly in 2020 compared to 2019



Note: Countries are ranked by alphabetical order. For Ireland, data pertain only to publicly-funded hospitals; public patients treated in private hospitals are not included, which overestimates the decrease showed here.
Source: OECD Health Statistics 2022.

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The disruption in early diagnosis has created a backlog of patients that will eventually seek cancer care but often for cancer detected at a later stage requiring more complex treatment and with lower survival probabilities. Such a backlog of patients has been already reported in several EU countries, including Belgium (Peacock et al., 2021[38]), France (Bardet et al., 2021[39]), Spain (de la Portilla de Juan, Reyes Díaz and Ramallo Solía, 2021[40]), as well as in the United Kingdom (Wilkinson, 2021[41]). Strategies to prevent an accumulation of delayed cancer patients require minimising any disruptions in early diagnoses.

Promoting the primary prevention of cancer through vaccination and other means can also help reduce the incidence of some cancer in future years (Box 2.5).

Box 2.5. Most EU countries avoided any reduction in HPV vaccination during the pandemic

Human papillomavirus (HPV) vaccination is an effective means of cervical cancer prevention. Nearly all EU countries were able to maintain or even increase HPV vaccination coverage in 2020, with some countries achieving substantial progress (e.g. the Netherlands, Latvia, Ireland and Denmark increased by over 10% the vaccination rate of girls aged 15). The only exception was Italy which saw a drop of nearly half in its HPV vaccination rate in 2020 (European Commission, 2022[42]).

Nonetheless, many countries still have a long way to go to meet the Europe's Beating Cancer Plan's objective of vaccinating at least 90% of the EU target population of girls against HPV and to significantly increase the vaccination of boys by 2030.

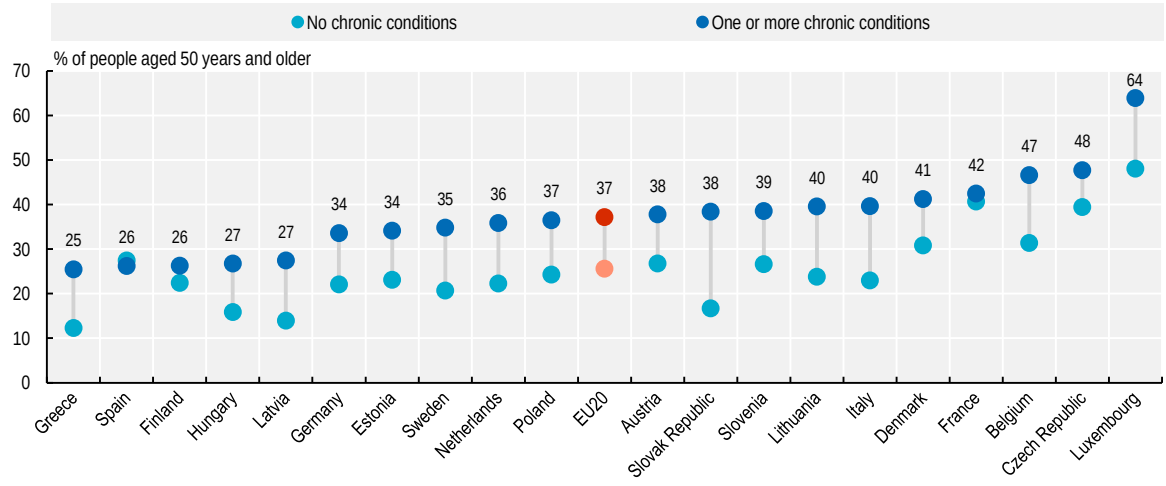
2.5. Disruptions in chronic care

People with chronic conditions faced a "double threat" during the pandemic: they were more vulnerable to complications and death from COVID-19, while they also experienced disruptions in care continuity during confinement periods and reported greater unmet needs. However, teleconsultations picked up rapidly in many countries and helped to at least partly ensure care continuity.

2.5.1. People with chronic conditions have been particularly impacted by disruption of services

Many health systems faced challenges in maintaining care for people with chronic conditions during acute phases of the pandemic. The Survey of Health, Ageing and Retirement in Europe (SHARE) found that people aged over 50 with a chronic condition were, on average, 40% more likely to report forgoing or postponing medical care during the first few months of the pandemic than those without a chronic condition (Börsch-Supan, 2022[43]). In Luxembourg, the Czech Republic, Belgium, France and Denmark, over 40% of people with a chronic condition reported that some care was cancelled by them or postponed by the health provider. On average, 37% of people with a chronic health condition had some care cancelled or postponed compared with 26% among those without a chronic condition (Figure 2.14).

Figure 2.14. People with chronic conditions were 40% more likely to have forgone or postponed care during the first months of the pandemic than those without chronic conditions



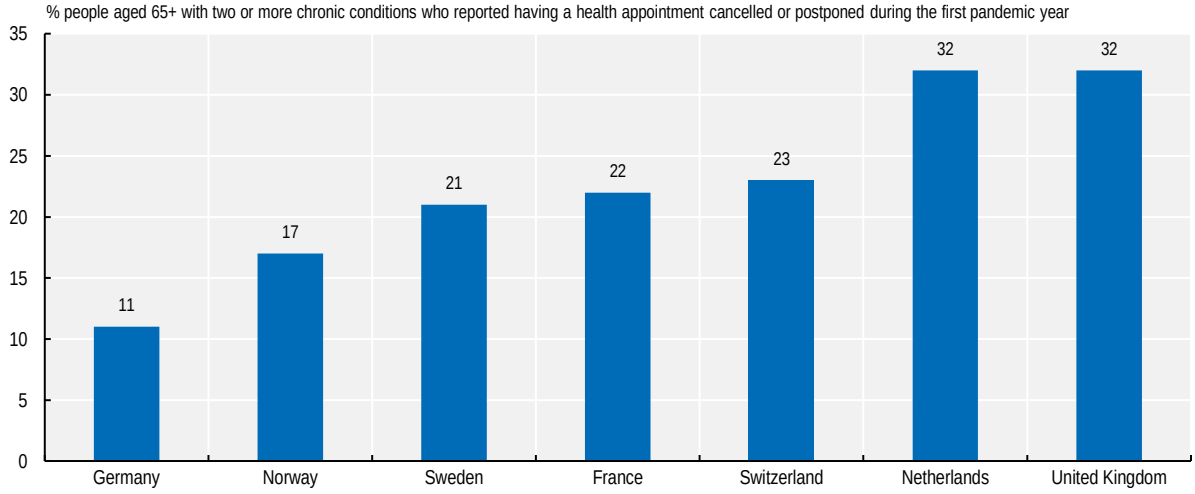
Note: Chronic conditions include AMI/heart failure, high blood pressure or hypertension, high cholesterol, stroke or vascular disease, diabetes or high blood sugar, chronic lung disease, Parkinson's disease, Alzheimer's disease, dementia, or other serious memory problems, rheumatoid arthritis, osteoarthritis or other rheumatism, or chronic kidney disease. Data collected between June and August 2020.

Source: Börsch-Supan (2022[43]), Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 8 COVID-19 Survey 1, https://doi.org/10.6103/SHARE.w8ca.800.

StatLink https://stat.link/y8vosk

The 2021 International Health Policy survey from the Commonwealth Fund found that over one in five people aged over 65 with two or more chronic conditions reported having missed or delayed care in 2020-21 in the group of seven countries surveyed in Europe (Williams II et al., 2021[44]). The share ranged from slightly over one in ten people in Germany to almost one in three people in the Netherlands and the United Kingdom (Figure 2.15).

Figure 2.15. In several countries, over one-in-five older people with chronic conditions had missed or delayed care due to the pandemic



Note: Data are based on responses to the following question: "In the past 12 months, did any appointment you had with a doctor or other health care professional get cancelled or postponed because of the coronavirus? Please think about all health care-related appointments including regular check-ups and routine screening tests." The data was collected in the second quarter of 2021.
Source: Williams II et al. 2021 (2021[44]), Commonwealth Fund International Health Policy Survey, https://doi.org/10.26099/mqsp-1695.

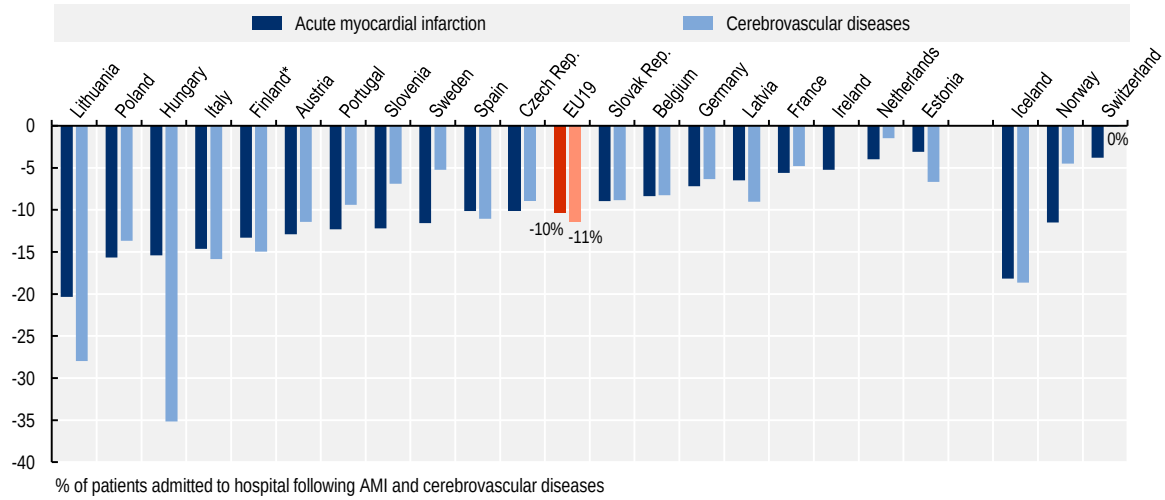
StatLink https://stat.link/dolm1y

People with chronic conditions are at high risk of complications if their conditions are not well managed. Rates of diabetes-related complications have increased in several countries during the pandemic due to reduced access to care. In the United Kingdom (England), only one in three people with diabetes received all their recommended checks in 2020-21 (The Guardian, 2022[45]). While rates of health checks among diabetic patients in the United Kingdom increased in the second half of 2020, they remained lower than before the pandemic at the end of the year (Carr et al., 2022[46]). In the Netherlands and Italy, studies on diabetic patients admitted to hospitals show a significant increase in the number of amputations in 2020 compared to 2019, likely due to delayed care for diabetic patients (Schuivens et al., 2020[47]; Caruso et al., 2020[48]). In the Italian study, the risk of amputation in 2020 was more than threefold than for diabetic patients admitted to a hospital in 2019 (Caruso et al., 2020[48]).

2.5.2. Timely access to acute care was not always assured

People with chronic conditions such as diabetes, high blood pressure and high cholesterol level have higher risk of cardiac events and cerebrovascular accidents. Growing evidence suggests that timely acute care was not always available during the pandemic for acute complications of these conditions. A lower number of patients was admitted to hospital following acute myocardial infarction (AMI) in all EU countries with available data in 2020. Lithuania and Hungary had large decreases in admissions for both AMI and cerebrovascular diseases (Figure 2.16).

Figure 2.16. The number of patients admitted to hospital following AMI and cerebrovascular diseases dropped in all countries in 2020 compared to 2019



Note: In Ireland, the data gap for cerebrovascular diseases is due to a break in the time series in 2020 caused by coding changes, preventing any direct comparison of 2020 data with data from earlier years. * In Finland, the pre-pandemic data relate to 2018.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/jnzcqd

At the beginning of the pandemic, the severity of conditions among patients who were admitted to hospitals for AMI and cerebrovascular diseases was higher than before the pandemic. This was partly due to hesitancy in seeking health care and postponing regular checks because of fear of contracting COVID-19, but also due to delays in timely acute care due to disruptions in ambulance and emergency care. In Italy, the severity of myocardial infarction increased between February and April 2020, leading to worse prognosis for cardiac patients (Tomasoni et al., 2020[49]). Mortality rates following patient admissions to hospital for acute cardiac event increased in several countries in 2020 (e.g. Austria, Lithuania, Poland and Portugal), confirming that timely cardiac care was adversely affected during the pandemic (see indicator "Mortality following acute myocardial infarction" in Chapter 6).

2.5.3. Several EU countries took actions to improve care continuity for people with chronic conditions

To ensure continuity of care for people with chronic diseases, many European countries transitioned rapidly to remote care and monitoring. In parts of the United Kingdom, there was a rapid expansion of remote monitoring programmes to keep track of people with chronic conditions in their own home. Patients were asked to capture relevant clinical data according to an agreed management plan and to upload it on a web-based remote monitoring platform. The data allowed health professionals to spot trends in a patient's condition and identify signs of deterioration before they require hospital admission. Over 725 patients with heart failure and COPD were supported between April 2020 and May 2021, and the programme evaluation shows that 288 hospital bed days were saved between January and April 2021 (NHS, 2021[50]).

While the widespread use of telehealth during the pandemic has been remarkable, more evidence is needed about the cost-effectiveness of telehealth in improving outcomes for people with chronic diseases (Bitar and Alismail, 2021[51]). A number of barriers to telehealth still exists, including equal access to technology and new digital tools, and appropriate digital health skills and literacy (Hinchman et al., 2020[52]).

Several countries expanded the roles of community nurses and pharmacists to ensure care continuity during the pandemic, as already noted. In some regions of Spain**,** community nurses, acting as case managers, have worked in close collaboration with geriatricians, family doctors, and other nurses to ensure continuity of care for fragile chronic patients (WHO, 2021[53]). Many countries also expanded the role of community pharmacists to maintain continuity of care for patients with chronic care needs. In Austria, France, Ireland and Portugal, community pharmacists have been allowed to extend prescriptions and prescribe medications for people with chronic diseases.

In Ireland, a Practitioner Chronic Disease Management Programme started in January 2020 and during the first year and a half of the pandemic managed to enrol 75% of eligible patients aged over 65. Patients with specific chronic health conditions are reviewed by a practice nurse and a GP twice a year (Health Service Executive, 2022[54]).

Many countries (e.g. Finland, Slovenia, Spain and the United Kingdom) have scaled up data sharing between primary health care and outpatient specialists and hospitals to enhance the capacity of primary care providers to achieve care co-ordination for people with chronic care needs.

2.5.4. Long COVID adds to the list of patients with continuous and often complex health care needs

The so-called "long COVID" (also known as "post COVID-19 condition") has emerged as a new long-lasting condition that will require better diagnosis and treatment in the coming years. There is not yet one commonly accepted definition of long COVID. According to the National Institute for Health and Care Excellence (NICE) in the United Kingdom, the term "long COVID" generally refers to patients who have signs and symptoms that develop during or after a COVID-19 infection, continue for more than 4 weeks (one month) and cannot be explained by an alternative diagnosis (NICE, (2022[55])). Long COVID can manifest itself in a wide range of symptoms, such as fatigue, brain fog, cardiovascular, neurological and cognitive problems, which can also affect people's mental health (Matsumoto et al., 2022[56]; Tabacof et al., 2022[57]).

Preliminary estimates indicate that at least 10% of people infected with COVID-19 experience some long COVID symptoms that last for more than one month (Expert Panel on effective ways of investing in health, 2022[58]), which means that long COVID has affected and possibly continues to affect over 25 million people across EU countries.

Long COVID impacts not only people's health and well-being, but also their employment and social activities. In Belgium, 60% of long COVID patients who responded to a survey in 2021 stated that they had limitations to work and 38% of them had not returned to work (Castanares-Zapatero et al., 2021[59]).

Some, but not all EU countries have established a long COVID patient pathway with dedicated treatments. Because the research on this new health condition is still ongoing, clinical guidelines are generally subject to continuous adjustments. Portugal, Austria, and Latvia have developed national clinical algorithms, patient pathways, and treatment recommendations for suspected and confirmed long COVID patients. In Germany, general practitioners work together with a network of specialists for less severe long COVID cases, while dedicated interdisciplinary outpatient clinics have been established for more severe and complex cases. Treating long COVID patients generally requires care co-ordination between primary care providers and specialists. It will add further challenges on health care systems in the coming years.

2.6. Disruptions in elective care and surgery

Most EU countries suspended elective (non-urgent) care during the pandemic to divert efforts towards COVID-19 patients and avoid people being infected while seeking care. In many countries, the suspension of elective care during the first wave of the pandemic in spring 2020 lasted 4 to 8 weeks (Webb et al., 2022[30]). While services resumed afterwards, the reopening was often gradual, and some activities were again suspended in subsequent waves of the pandemic later in 2020 and 2021.

Across the 23 EU countries for which data are available, nearly 2 million fewer elective surgical procedures were performed in 2020 compared with 2019 (equivalent to a 16.5% reduction across 15 procedures). The disruption also affected diagnostic activities, with over 5 million fewer MRI and CT diagnostic exams in 2020 compared with 2019 (a 6.8% reduction). The suspension of elective surgery and diagnostics generated backlogs, leading to longer waiting times and waiting lists.

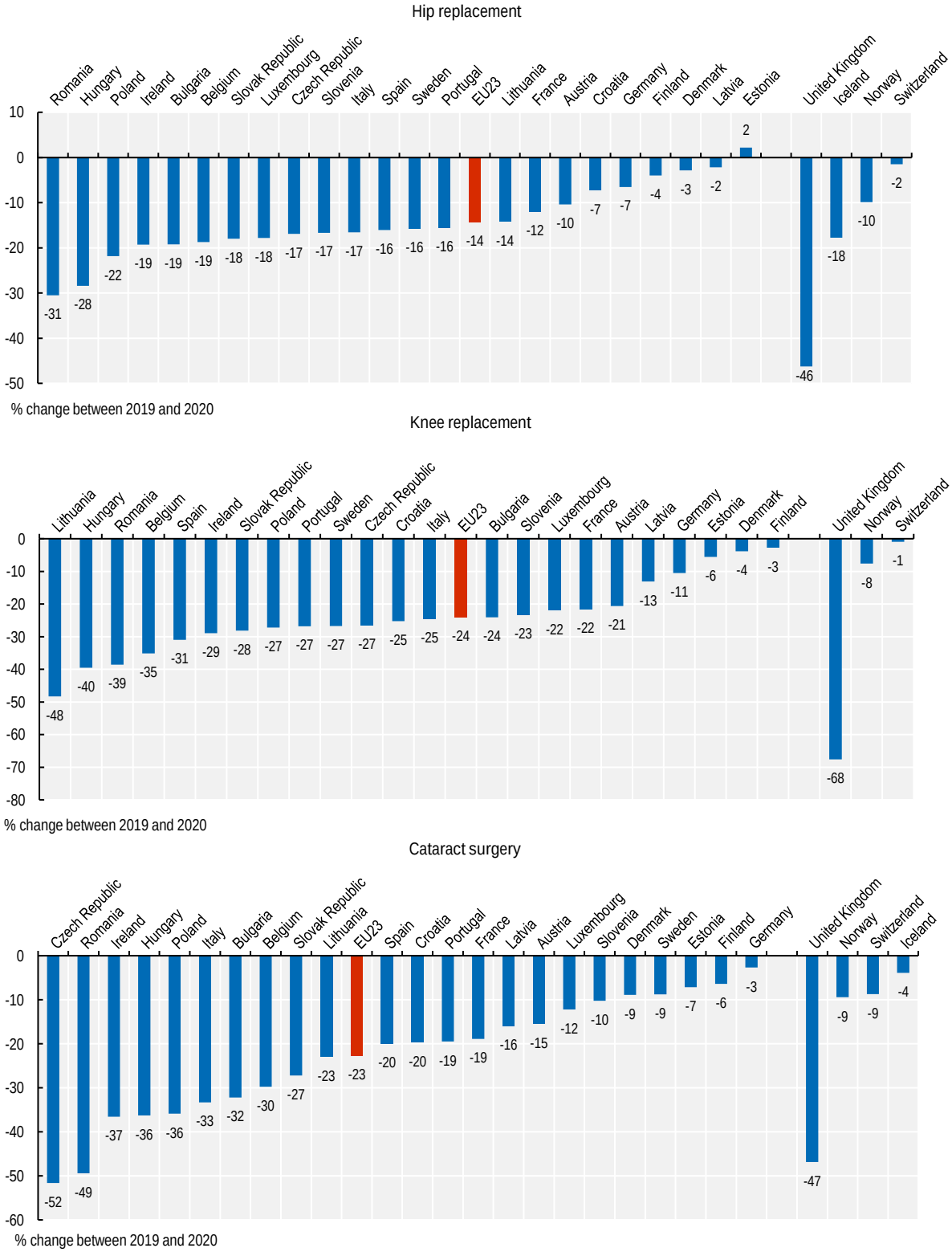
2.6.1. Reductions in the volume of surgical activities in 2020 resulted in a marked increase in the number of people on waiting lists in many countries

The number of hip replacements fell on average by 14% in 2020 compared with 2019 across the 23 EU countries with available data, but there was wide variation across countries (Figure 2.17). While there was no or very little reduction in Denmark, Estonia, Finland and Latvia, the volume of hip replacements fell by over 20% in 2020 in Poland, Hungary and Romania. Outside the EU, the reduction in hip replacements in the United Kingdom was very large (46% reduction), but negligible in Switzerland.

The reduction in knee replacements and cataract operations was even larger in most countries, falling by 24% and 23% respectively (Figure 2.17). At least five EU countries as well as the United Kingdom experienced a drop of at least 30% in the number of knee replacements and cataract operations in 2020. By contrast, the reductions in Denmark, Estonia, Finland, Germany and Switzerland were much smaller, therefore generating less of a backlog.

The reduction in surgical activities in 2020 was influenced by the duration of the suspension of elective surgery and how quickly hospitals were able to resume their activities once the suspension was lifted.

Figure 2.17. The number of hip and knee replacements and cataract surgery fell sharply in 2020



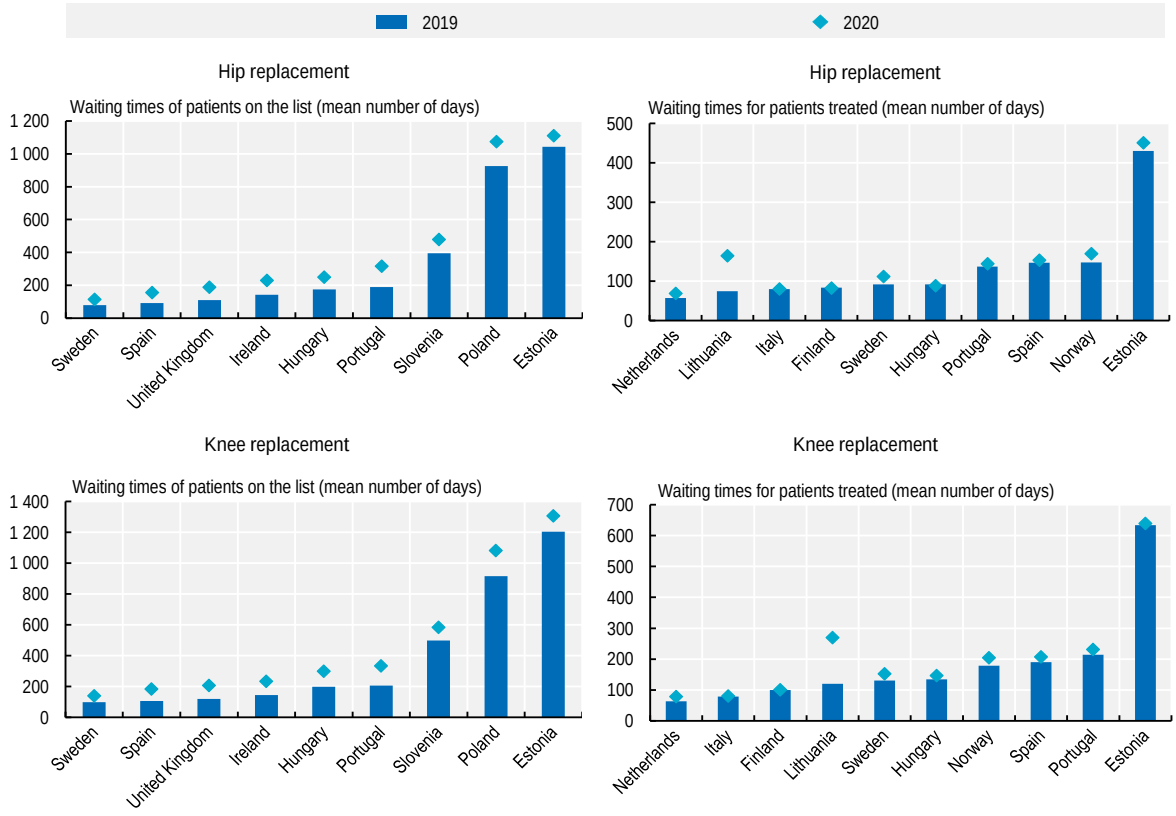
Note: The EU average is unweighted. For Ireland, data pertain only to publicly-funded hospitals; public patients treated in private hospitals are not included, which overestimates the decrease showed here. Iceland does not provide any data on knee replacement.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/0d713o

The reductions in the volume of surgical activities in 2020 resulted in a marked increase in waiting times in several European countries. This was particularly the case for people who remained on the waiting lists, while the increase was less marked for those people who managed to get treatment in 2020. This can be explained by the fact that while the supply of elective surgery fell during the pandemic, the demand also fell as fewer patients were added to waiting lists, and many patients on the lists did not undergo surgery because of the fear of COVID-19 infection. As a result, the waiting times for patients on the lists increased, but those who were treated in 2020 often did not experience longer waiting times than before the pandemic.

While Estonia had the highest waiting times for patients on the list for hip and knee replacement, Poland and Portugal had the largest increases in 2020 (Figure 2.18). When looking at patients who were treated, the increase in waiting times for hip and knee replacements was much smaller or almost nil in Finland and Italy, but it more than doubled in Lithuania.

Figure 2.18. Waiting times for people on waiting lists for hip and knee replacements increased greatly in 2020



Note: For Norway, waiting times are over-estimated as they start from the moment a doctor refers a patient for specialist assessment up to treatment (while in other countries they only start when a specialist has assessed the patient and decided to add the person on the treatment waiting list).
Source: OECD Health Statistics 2022.

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Clearing the elective surgery backlog created during the pandemic will depend mainly on how quickly countries are able first to catch-up to the pre-pandemic level of surgical activities and then to go beyond the pre-pandemic level to offset the reduction during the pandemic (Box 2.6).

Box 2.6. How long might it take to clear the backlogs in elective surgery?

The reduction in surgical activity rates described above can provide a first rough idea of the time that countries might need to recover from the cumulated backlog. Let's assume that the volume of hip replacement in a given country fell by 15% in 2020 (which is close to the EU average reduction). If the volume goes back to the pre-pandemic level in the following year (as has been the case in 2021 in Portugal – Figure 2.19), the volume would subsequently have to be at least 5% higher for three consecutive years to catch up with the initial drop if the demand for hip replacement remains the same over time (i.e. if the "missing patients" who were expected to be treated during the pandemic continue to seek treatment and if the same number of new patients continue to be added to waiting lists as before the pandemic). The increase would have to be even higher if the drop in volume extended over two years (2020 and 2021). A reduction in volume of 10% in two consecutive pandemic years would require a 5% increase over four consecutive years.

In the United Kingdom where the drop in elective surgery in 2020 was much more pronounced than in all EU countries for which data are available, the National Audit Office estimated at the end of December 2021 that the backlog of people on the waiting lists for elective and cancer care in England would continue to be much greater than before the pandemic up to at least March 2025, but the increase would be less if the supply of elective care was greater than initially planned and if only half of "missing patients" returned to get care (National Audit Office, 2021[60]). The Institute of Fiscal Studies reported that under a "middle" scenario where only half of patients returned, the waiting list for pre-planned NHS treatment would peak at 8.7 million in October 2023 before starting to decrease (Institute for Fiscal Studies, 2022[61]).

2.6.2. Many countries have taken actions to reduce backlogs and waiting times in elective surgery caused by the pandemic

Many EU countries have taken actions to address the backlogs and increases in waiting times for elective care that were generated by the disruption during the pandemic. Most of these policies focus on increasing the supply of diagnostic services and operations (Table 2.2). Fewer countries have tried to improve the management of the demand for elective surgery. Most of the actions on the demand-side have focused on implementing more strictly the prioritisation tools of patients on the list based on clinical needs, while several countries have also targeted patients with very long wait (e.g. over a year) as being unacceptable regardless of clinical needs (OECD, forthcoming[3]).

Table 2.2. Overview of approaches used to reduce backlogs following the pandemic

Country	Additional funding for health care providers	Expand health workforce (e.g. doctors, nurses, etc.)	Extend working hours of health workforce	Better use of capacity or operating theatres	Involvement of additional providers (e.g. private providers)	Digital consultations
Czech Republic	✓			✓		
Finland	✓	✓		✓	✓	✓
France	✓	✓	✓	✓	✓	✓
Greece		✓		✓	✓	✓
Ireland	✓	✓		✓	✓	✓
Italy	✓	✓	✓	✓	✓	✓
Lithuania		✓		✓	✓	✓
Portugal	✓	✓		✓	✓	✓
Slovenia	✓		✓	✓	✓	✓
United Kingdom (England)	✓	✓	✓	✓	✓	✓

Source: OECD Health Systems Resilience Questionnaire 2022.

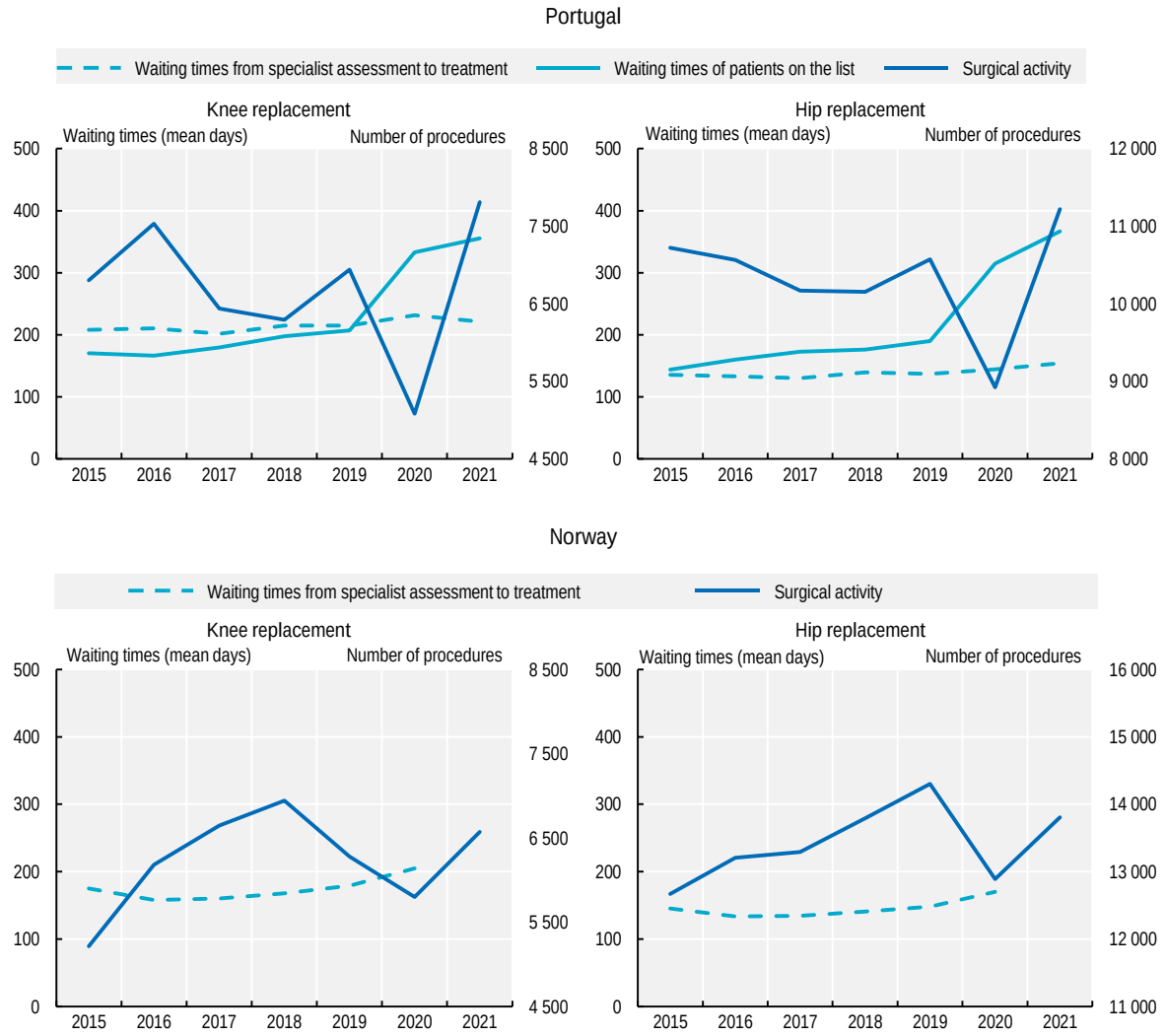
Several EU countries have provided additional or earmarked funding for elective care in the second half of 2020, and in 2021 and 2022 to boost supply and address the backlogs. In Ireland, the Waiting List Action Plan is supported by dedicated funding of EUR 350 million in 2022 to prevent a projected 40% increase in the waiting list (Government of Ireland, 2022[62]). In Italy, the national government provided additional funding to regions in 2020 to address long

waiting lists. The funds included EUR 112 million for hospital admissions and EUR 366 million for specialist visits and outpatient care, and were subject to each region developing its own regional plan to address the waiting lists and specify the delivery timeline and use of resources (Government of the Italy, 2020[63]). In Finland, the government announced in April 2022 that EUR 110 million of the EU's Recovery and Resilience Plan will be allocated in 2023 to reducing the backlog in treatment and rehabilitation services and speeding up access to care. Additional funding of EUR 90 million in 2024 and EUR 30 million in 2025 will be allocated for the same purposes (Government of Finland, 2022[64]).

In most countries, the additional funding allocated to address the backlogs has been used to pay overtime for additional sessions and increase the use of operating theatres, contract private providers (where a private system co-exist with a public system), create dedicated elective facilities or hubs, and incentivise initiatives that reduce cancellations and length of stay to optimise capacity use. However, additional funding is not a guarantee that the supply will increase and translate into shorter waiting lists and waiting times.

In the few countries for which surgical activity data are available for 2021, the number of hip and knee replacements bounced back in 2021 and nearly or fully returned to their pre-pandemic level of 2019. This was the case in Portugal where the volume of hip and knee replacements in 2021 went back to at least their 2019 level, although this increase in surgical activities in 2021 did not prevent waiting times to increase for patients on waiting lists (Figure 2.19).

Figure 2.19. Surgical activities rebounded in 2021 in Portugal and Norway



Source: OECD Health Statistics 2022.

StatLink https://stat.link/12gv58

Policy responses to increase the supply of surgical procedures can be grouped into three main categories: increasing productivity, engaging private providers, and managing the health workforce.

Increasing productivity: Contracting additional sessions, extending working hours, reducing cancellations

Some EU countries have tried or are planning to increase productivity through efficiency gains and better use of capacity and operating theatres. Policy makers have targeted reductions in cancellations and missed appointments, better use of operating theatres, and reducing bed-blocking through increasing rehabilitation services leading to shorter length of stay. Better use of operating theatres can be achieved through additional sessions on the weekend and paying overtime or recruiting additional staff.

In Ireland, the National Treatment Purchase Fund provides extra funding to public hospitals to fund additional staff and overtime to treat more patients during weekends and to shift patients to outpatient clinics for minor treatments. Plans also include an improvement of waiting list management by validating patients for being ready for treatment and improving data accuracy to avoid duplications and missed appointments. Reductions in missed appointments (currently at around 11%) will be obtained through new patient-centred booking arrangements with more agile scheduling. The target is to reduce missed appointments to 8% by December 2023 (Government of Ireland, 2022[62]).

In Portugal, a law adopted in November 2021 provides further incentives to develop extra capacity for surgical activity. Additional financial payments target in particular those surgery with longer waiting lists and waiting times going beyond the waiting time guarantees (Ministry of Health, 2021[65]).

In the United Kingdom (England), a number of initiatives are planned to improve efficiency in the delivery of elective surgery, including increasing the proportion of surgical procedures performed in outpatient departments rather than in inpatient settings. To boost supply, there are also plans to make temporary staffing banks more attractive by making it as easy as possible for staff to take on extra shifts, paying them promptly for working these extra shifts, and providing greater support to temporary staff by offering them more permanent employment or development opportunities (NHS England & NHS Improvement, 2022[66]).

However, increasing productivity presents some challenges. In several EU countries, the health workforce is already overstretched, making staff reluctant to work more overtime or exposing them to higher risk of burnout and resignation. Increasing volumes of activities therefore require careful planning and avoiding putting excessive pressures. Contracting beyond normal volumes is also challenged by the difficulty to distinguish between regular volumes and the additional volumes that go beyond what would have been provided without additional funding.

Contracting with private providers to treat publicly-funded patients

Several EU countries have involved private providers in the past to reduce waiting times, and plan to do so following the backlog caused by COVID-19. Contracting with private providers can increase supply quickly by relying on existing capacity in the private sector. Such contracts generally relate to high-volume procedures, with a focus on achieving maximum waiting time guarantees and people who have waited for a long time. In some countries, patients who have waited above the maximum can choose a provider in the private sector.

In Denmark, before the pandemic, patients were guaranteed a maximum waiting time from a GP or specialist referral to treatment of one month, and these maximum waiting times have been maintained during the pandemic. If the region cannot ensure that treatment will be initiated within one month, patients have the right to an “extended free choice of hospital”. This means that patients may choose to go to a private hospital (OECD, 2020[67]).

In Ireland, the Health Service Executive and National Treatment Purchase Fund plans to commission extra public and private activity under the 2022 Waiting List Fund to provide an additional 100 000 outpatient appointments, 30 000 diagnostics and 28 000 inpatient or day case procedures. A partnership framework for procurement of services from the private sector will be established (Government of Ireland, 2022[62]).

In Italy, several regions have a mix of public and private providers treating publicly-funded patients, and private providers are expected to play a more prominent role to treat patients especially in specialties such as orthopaedics (e.g. hip and knee replacements) and ophthalmology (e.g. cataract). One region (Valle D’Aosta) plans to direct more patients to accredited private hospitals for orthopaedic surgery (Valle D’Aosta Region, 2022[68]).

In the United Kingdom (England), there are plans to create additional capacity by increasing the involvement of private providers (known as the independent sector) to treat publicly-funded patients. Integrated care systems will be responsible for planning and locally co-ordinating the provision of services between public and private providers.

Private providers will focus mostly on high-volume and low-complexity cases, with the objective of freeing up capacity of public providers to focus on more complex work. Depending on local needs and capacity, there may be scope for private providers to contribute selectively to diagnostics or more complex cases. Access to private providers will be integrated within the framework of patients' rights to choose for first outpatient appointment and if a patient is waiting too long (NHS England & NHS Improvement, 2022[66]).

In Slovenia, a system of electronic referrals monitoring was already in place before the pandemic, and it was used to monitor the number of postponed treatments and waiting times in real time throughout the pandemic. To deal with care backlogs, national authorities published a call for tender to contract extra capacity for defined treatments and volumes, open also to private providers that otherwise do not have contracts with the statutory health system.

One possible concern when contracting with private providers is that they often draw from the same pool of doctors employed by public hospitals. Therefore, there is a risk that increasing supply by private providers can be offset by reductions in volume by public providers. Another concern relates to the payment of private providers, whether and to what extent it should be aligned with public providers' payments.

Expanding and retaining health workforce

In many countries, the available health workforce has been the biggest constraint in increasing rapidly the volume of activities to deal with backlogs. This is because such policies imply either the current workforce working longer hours (with the risk of burnout and resignation) or expanding the workforce. However, training new nurses and new doctors takes time, hence the main options to address the backlogs in the short-term are either to retrain and redeploy existing staff who may not be over-loaded or recruit new staff from abroad. Recruiting skilled health workers from other countries can provide a quick solution, but it can exacerbate the "brain drain" from lower income to higher-income countries and shortages in countries where workers are recruited from.

Both Ireland and the United Kingdom have relied on the international recruitment of doctors and nurses to address immediate health workforce shortages. In Ireland, while there are plans to develop strategic workforce planning to enhance capacity and to invest in education and training as a long-term solution, the strategy to address current shortages in the short-term relies on the recruitment of staff from abroad (Government of Ireland, 2022[62]). The recruitment of foreign-trained nurses in Ireland reached an all-time high in 2021, driven mainly by a large increase in the recruitment of nurses from India and the Philippines but also from Zimbabwe and Nigeria (Irish Nursing and Midwifery Board).

In the United Kingdom (England), the NHS England Plan to tackle the COVID-19 backlog included the international recruitment of more than 10 000 nurses in fiscal year 2021/22, and in particular those with experience in critical care and operating theatres (NHS England & NHS Improvement, 2022[66]). The international recruitment of nurses in England and the rest of the United Kingdom reached an all-time high in 2021/22, with a strong growth in nurses recruited from the Philippines and India, but also from African countries like Zimbabwe and Nigeria (Shembavnekar N and Buchan J, 2022[69]). NHS England also plans to develop new roles for nurses, such as anaesthetic associates, to help address the shortage of anaesthetists. To increase the retention of nurses and other health workers, a Retention Programme supports NHS Trusts to improve flexible working conditions and workplace well-being, and support staff at the start and end of their careers. There are also efforts to support employers to manage staff absence as it is estimated that improving attendance nationally by around 1% could amount to as many as 12 000 full-time equivalent staff (NHS England & NHS Improvement, 2022[66]).

According to recent OECD estimates, at least half of the new investments required to support health system recovery and make them more resilient should be on the health workforce to increase recruitment and retention rates by improving working conditions (Morgan and James, 2022[70]).

2.7. Summary of the pandemic's impact in disrupting health services

The COVID-19 pandemic has led to unprecedented disruptions in the delivery of many health services as resources were diverted to contain and manage the pandemic and the population was encouraged to avoid physical and social contacts during the initial stage and peak phases. This chapter has reviewed the degree of disruptions in different types of care, focusing mainly on the first year of the pandemic because of limited availability of more recent data in most countries. Table 2.3 provides an overview of the degree of disruptions for selected services in primary care (vaccination), mental health care, cancer care, chronic care and elective surgery in 2020. These services have been selected mainly based on data availability in most countries, not necessarily because they are the most important ones to assess the availability of needed care in these different care areas. This is particularly the case in the areas of

mental health care and chronic care where indicators related to reductions in hospital stays in 2020 are used to assess the degree of disruptions, but indicators related to disruptions in outpatient care would have been at least equally if not more relevant. Countries are classified in three groups based on whether there was a small or no disruption in services in 2020, moderate disruption or large disruption. For a few indicators (vaccination), the level of service provision in 2020 is also taken into account, so that a small increase in 2020 is not rated positively if the vaccination coverage remained low in 2020, and vice versa (a small decrease in 2020 is not rated negatively if the vaccination rate remained high).

Some countries, like Denmark, Estonia, the Netherlands, Norway and Switzerland, have done generally better in minimising disruptions across most health services considered in Table 2.3. Norway and Denmark had lower COVID-19 cases during most of 2020, which helped to minimise disruptions for other health services. Other countries had greater disruptions across most health services, including three Southern European countries (Italy, Portugal and Spain) and a number of Central and Eastern European countries (the Czech Republic, Hungary, Lithuania, Poland and the Slovak Republic).

On the positive side, most countries have been able to maintain high childhood vaccination rates during the first year of the pandemic, and many countries have achieved notable progress in the vaccination of older people against seasonal influenza. Generally, those countries that had higher vaccination coverage against influenza before the pandemic were able to increase it even more in 2020. Moving forward, the challenge will be to continue to achieve high vaccination rates to protect the population against various infectious diseases and avoid additional pressures on health care systems.

The disruption in cancer screening, along with other early detection services, during the first few months of the pandemic has raised serious concerns about long-term consequences, as postponed diagnoses inevitably result in cancer being diagnosed at a later stage, making cancer treatment more complex and costly, and reducing survival probabilities. Most countries were able to offset at least partly the initial reduction in cancer screening in the first half of 2020 by scaling up activities in the second half, thereby lessening the drop over the course of the year. The disruption in screening and new cancer diagnoses has been one of the main factors behind the reduction in cancer treatment as reflected by the drop in cancer-related operations in all countries in 2020. Most EU countries still have a way to go to reach the ambitious goal set out in the Europe's Beating Cancer Plan of having 90% of the EU population who qualify for breast, cervical and colorectal cancer screenings offered screening by 2025.

There was a sharp reduction in elective surgery such as hip and knee replacements in all countries in 2020, as non-urgent surgical procedures were the first ones to be suspended and postponed when there was a need to free up resources to handle the crisis. The number of hip replacements fell on average by 14% in 2020 compared with 2019 across the 23 EU countries with available data, and the number of knee replacement fell even more (by 24%), but the reduction was much smaller in some countries (e.g. Denmark, Estonia and Finland). The "missed volumes" of surgical activities in 2020 led to a sharp increase in the number of people on waiting lists and waiting for a long time in several countries. Many European countries have taken actions in 2021 and 2022 to address the backlog of patients waiting for elective surgery by providing additional funding to increase surgical activities. In the few countries for which data are available for 2021, the data show that surgical activities have recovered or almost recovered from their pre-pandemic level. In most countries, the main constraint in rapidly increasing the volume of surgical activities has been the health workforce. Incentives are provided to current staff to work harder and longer hours, but this strategy has limits and runs the risk of burnout and resignation.

Table 2.3 also shows that more than two years after the onset of the pandemic, there are still many data gaps to assess the impact of the pandemic on different health services during the first year (2020), and data availability is even much more limited for 2021. The limited availability of timely data on health care activities and waiting times restricts the possibility to monitor the speed of the recovery and the backlogs of patients waiting for treatments. Most EU countries took rapid actions at the beginning of the pandemic to mitigate data deficits to help them manage COVID-19 responses, and there have been remarkable progress in gathering real time (or almost real time) data to do so. Similar progress would be needed in the collection and reporting of more timely data on regular health care activities, (unmet) health care needs, waiting times and health outcomes for patients, to monitor progress in the recovery from the pandemic.

Table 2.3. Overview of the pandemic's impact in disrupting selected health services in 2020

	Primary care		Mental care	Cancer care		Chronic care	Elective care	
	DTP3 childhood vaccination (percentage point change from 2019)	Senior influenza vaccination (percentage point change from 2019)	Hospital stays for mental disorders (excess reduction compared to 2019)	Breast cancer screening (% change from 2019)	Cancer-related surgery* (% change from 2019)	Hospital stays for AMI (% change from 2019)	Diagnostic CT and MRI exams (% change from 2019)	Hip and knee replacement surgery (% change from 2019)
Austria	85.0% (0)		-4.5%		-8.3%	-12.9%	-5.9%	-14.8%
Belgium	97.0% (-1)		-24.2%		-14.2%	-8.4%	-3.1%	-25.7%
Bulgaria	91.2% (-2)	5.8% (+2.3)			-18.1%		-8.3%	-20.3%
Croatia	93.7% (-1)	39.0% (+5)		-6.7%	-4.5%		-7.8%	-13.4%
Czech Republic	96.8% (+0.1)	23.9% (+1)	-13.0%	-3.0%	-17.8%	-10.1%	-4.6%	-20.9%
Denmark	96.0% (0)	75.0% (+23)		0.6%	-10.1%		2.2%	-3.3%
Estonia	91.0% (-0.4)	12.0% (-3)	-8.0%	-4.5%	-5.4%	-3.1%	-4.6%	-0.9%
Finland	91.0% (0)	53.7% (+6.4)	-10.1%	-1.3%		-13.3%		-3.4%
France	96.0% (0)	59.9% (+7.9)	-10.3%	-12.7%	-8.6%	-5.6%		-16.0%
Germany	93.0% (0)	47.3% (+8.5)	-13.3%		-6.5%	-7.2%	-0.3%	-8.2%
Greece	99.0% (0)	73.5% (+14.6)					-40.6%	
Hungary	99.9% (0)	30.5% (+6.9)	-21.7%	-13.8%	-17.3%	-15.4%	-8.3%	-32.7%
Ireland	94.2% (+0.7)	70.5% (+11.6)		6.3%	-24.0%	-5.2%		-22.0%
Italy	93.7% (-2.4)	54.6% (+1.5)	-22.7%	-16.0%	-14.9%	-14.6%	-12.3%	-19.9%
Latvia	100.0% (0)	9.1% (-2.6)	-10.6%	-23.5%		-6.5%	3.1%	-6.4%
Lithuania	91.4% (-0.8)	26.3% (+4.8)	-27.7%	-13.6%	-17.8%	-20.3%	-17.3%	-27.9%
Luxembourg	99.0% (0)	46.3% (+5.9)		-5.4%	-10.1%		-2.0%	-19.7%
Malta	98.4% (+0.2)	67% (+14.1)		3.9%				
Netherlands	94.2% (+0.5)	67.9% (+6.6)	-6.5%	-7.5%		-4.0%	1.8%	
Poland	90.4% (-4.8)		-28.7%		-17.0%	-15.7%	-8.8%	-23.4%
Portugal	99.0% (0)		-21.6%		-21.0%	-12.3%	-5.5%	-20.0%
Romania	87.0% (-1.1)	35% (+12)			-29.8%		5.0%	-32.6%
Slovak Republic	97.0% (+0.3)	12.8% (+1.3)	-15.4%	-12.3%	-10.5%	-9.0%	-9.2%	-22.5%
Slovenia	95.0% (0)	27% (+8.2)	-19.5%	-3.3%	-8.2%	-12.2%	0.5%	-19.3%
Spain	94.8% (-0.8)	67.7% (+13)	-11.4%		-12.5%	-10.1%	-10.9%	-23.8%
Sweden	97.0% (-1.0)	60.4% (+7.6)	-4.6%		-10.4%	-11.6%		-19.6%
Iceland	93.4% (+0.9)	54.6% (+7.1)	-8.9%	1.6%	-9.0%	-18.2%	-4.7%	-17.7%
Norway	97.1% (0.1)	57.0% (+14)	-5.5%	-12.3%	-4.3%	-11.5%	0.5%	-9.2%
Switzerland	96.5% (0.3)		-4.2%		-4.2%	-3.8%		-1.2%
United Kingdom	93.0% (0)	72.4% (0)		-1.2%	-25.7%		-14.8%	-55.6%
Small or no disruption	> 90% and vaccination increased or maintained	> 50% and vaccination increased	≤ 5% excess decrease or increase in hospital stays	≤ 5% decrease or increase in screenings	≤ 5% decrease in surgery	≤ 5% decrease in discharges	≤ 5% decrease or increase in exams	≤ 5% decrease in surgery
Moderate disruption	> 90% but vaccination decreased	< 50% and vaccination increased	5-10% excess decrease in hospital stays	5-10% decrease in screenings	5-10% decrease in surgery	5-10% decrease in discharges	5-10% decrease in exams	5-10% decrease in surgery
Large disruption	< 90% and vaccination decreased or maintained	< 20% or vaccination decreased	> 10% excess decrease in hospital stays	> 10% decrease in screenings	> 10% decrease in surgery	> 10% decrease in discharges	> 10% decrease in exams	> 10% decrease in surgery

Note: *This includes five cancer-related surgery: stem cell transplantation, prostatectomy, partial excision of mammary gland, total mastectomy and hysterectomy. Cyprus is not shown because data was not submitted to the 2022 Joint Questionnaire. For Iceland, the reduction in "hip and knee replacement" only relates to hip replacement. DTP3: diphtheria-tetanus-pertussis vaccine, 3rd dose. AMI: acute myocardial infarction.
Source: OECD Health Statistics 2022 (based on OECD/Eurostat/WHO-Europe Joint Questionnaire on Non-Monetary Health Care Statistics).

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Part II Overview of health indicators

3 Health status

This chapter describes the health status of EU citizens, including trends in life expectancy, main causes of death, the occurrence of communicable and chronic diseases, and mental health issues. The COVID-19 pandemic resulted in unprecedented reductions in life expectancy in many EU countries in 2020 and 2021, erasing the gains over the previous decade in several countries. Looking more broadly at all causes of death, the main causes of death across EU countries remain cardiovascular diseases, which accounted for over one-third of all deaths in 2019, and cancers, which accounted for over one-fourth of all deaths. While the pandemic is not over yet, EU countries must continue to prepare to face the "epidemic" of chronic diseases. Over 30% of people aged 65 and over report having at least two chronic conditions on average across EU countries, requiring in many cases appropriate care co-ordination and management to avoid complications. Furthermore, over 25% of people over aged 65 report at least one limitation in activities of daily living that may require some long-term care assistance. The mental health of older people but also of younger adults has deteriorated during the pandemic, increasing the demand on mental health care services as well.

Trends in life expectancy

Healthy life expectancy at birth and at age 65

COVID-19 mortality and excess mortality

Main causes of mortality

Mortality from circulatory diseases

Mortality from cancer

Adult mental health

Prevalence of diabetes and asthma

Chronic diseases and disabilities among older people

Trends in life expectancy

The COVID-19 pandemic resulted in unprecedented reductions in life expectancy in many EU countries in 2020 and 2021. In the EU as a whole, life expectancy at birth reached just over 80 years in 2021, over one year less than in 2019. Spain and Sweden had the highest life expectancy among EU countries (over 83 years) while life expectancy was over 10 years lower in Bulgaria and Romania (Figure 3.1).

The pandemic led to a sharp widening of the life expectancy gap across EU countries, as the fall in life expectancy was much greater in Central and Eastern European countries that already had much lower life expectancy before the pandemic than most Western and Northern European countries. In many Central and Eastern European countries, the decline in life expectancy since the beginning of the pandemic in 2020 erased at least temporarily all the gains from the previous decade if not longer (Figure 3.2).

Only two countries managed to register a small gain in life expectancy between 2019 and 2021 – Luxembourg and Norway. Other Nordic countries, along with Malta and Switzerland, also did relatively well by not experiencing any reduction or only a marginal reduction.

Some countries like Belgium, Italy and Spain had a huge reduction in life expectancy in 2020, but were able to recover most of the loss in 2021 as the number of deaths from COVID-19 and other causes fell. This was not the case in many Central and Eastern European countries where deaths from COVID-19 and other causes were much greater in 2021 than in 2020, precipitating further reductions in life expectancy. Bulgaria, the Slovak Republic, Latvia and Estonia had the greatest reduction in life expectancy in 2021, with a drop of at least two years (Eurostat, 2022[1]).

Looking at the life expectancy of people at age 65, the loss in 2020 and 2021 largely due to the pandemic erased at least temporarily the gains from the previous decade in many countries. On average across EU countries, life expectancy at age 65 was slightly lower in 2021 than in 2010 (19.3 years in 2021 compared with 19.4 years in 2010).

Women continue to live many years longer than men in all EU countries – 5.6 years on average across the EU in 2021. While the gender gap was narrowing before the pandemic, it has widened slightly since the beginning of the pandemic as COVID-19 mortality has generally been greater among men than women. However, the gender gap in healthy life expectancy is much smaller as women tend to spend a greater proportion of their lives with some health issues and activity limitations (see indicator “Healthy life expectancy”).

Definition and comparability

Life expectancy at birth measures the average number of years that a person can expect to live based on current mortality rates (age-specific death rates). However, the actual age-specific death rates of any particular birth cohort cannot be known in advance. If age-specific death rates are falling as was the case before the pandemic and can be expected to be the case once the pandemic is over, actual life spans will be, on average, higher than life expectancy calculated with current death rates.

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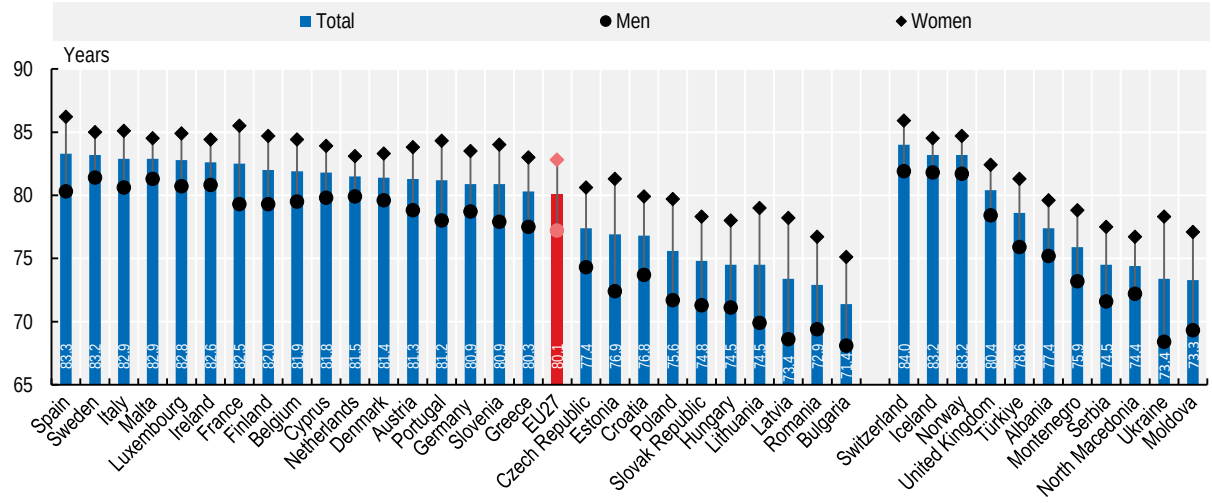
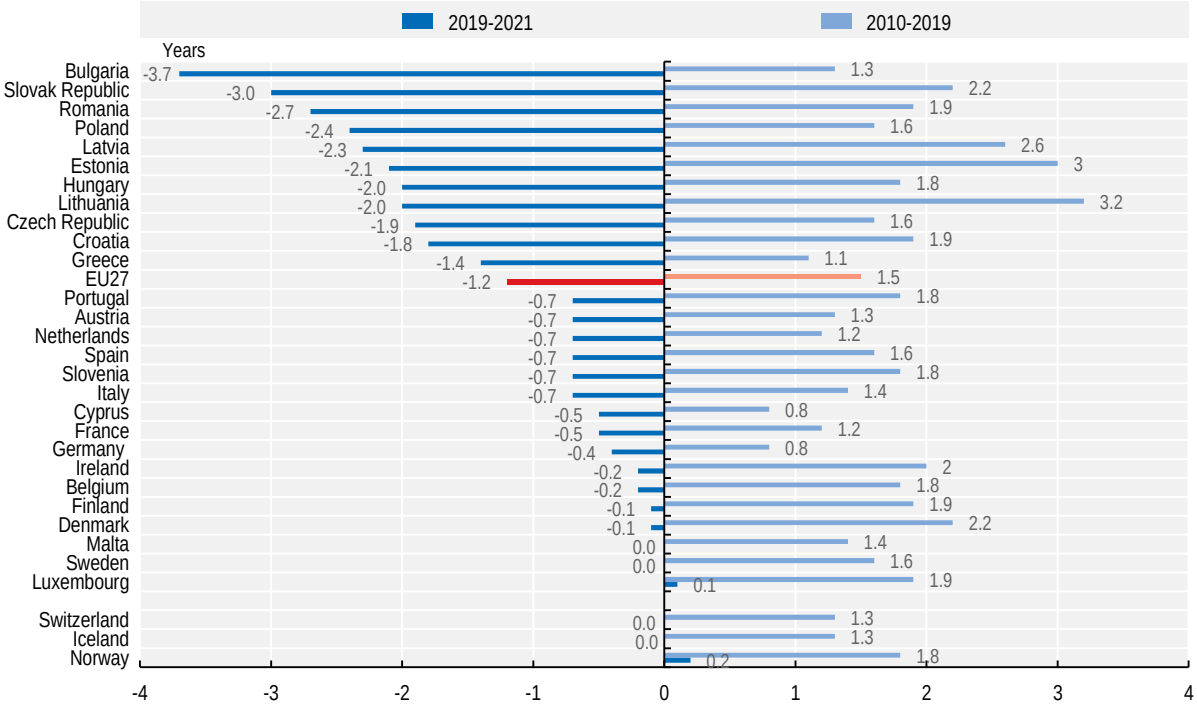
Figure 3.1. Life expectancy at birth, by gender, 2021 (or nearest year)



Note: The EU average is weighted. Data refer to 2020 for Ireland, Albania, North Macedonia, Montenegro, Serbia and the United Kingdom, and to 2019 for Moldova, Türkiye and Ukraine.
Source: Eurostat Database, complemented with OECD Health Statistic 2022 for the United Kingdom and Türkiye, and WHO for Moldova.

StatLink https://stat.link/uowhdr

Figure 3.2. Gains or declines in life expectancy, 2019-21 and 2010-19



Note: The EU average is weighted. Data for 2021 in Ireland refer to 2020.
Source: Eurostat Database.

StatLink https://stat.link/ew9yjq

Healthy life expectancy at birth and at age 65

Healthy life expectancy is an important indicator of population health, as it signals whether years of life are lived in good health or with some health issues and disabilities (activity limitations). A greater number of healthy life years generally means a healthier workforce, fewer early retirements due to health problems, and reduced or postponed health and long-term care needs.

In 2020, the number of healthy life years was 64.5 years for women and 63.5 years for men in the EU (Figure 3.3). The gender gap in healthy life years (one year) was much smaller than in life expectancy (5.7 years in 2020) as women tend to spend a greater proportion of their lives with some activity limitations: 22% of the life expectancy of women was spent with some activity limitations in 2020 compared with 18% for men on average in the EU.

Among EU countries, Sweden recorded the highest number of healthy life years at birth for both women and men, followed by Malta and Italy. Latvia had the lowest number of healthy life years for both women and men. Variations across countries can be partly explained by the way disability (activity limitation) is measured in each country, impacting the comparability of the results to some extent (Eurostat, 2022[1]).

The gender gap in healthy life years was particularly large in Bulgaria and Poland, driven mainly by much shorter life expectancy among men. In contrast, in the Netherlands, Portugal, Finland, Luxembourg and Denmark, the number of healthy life years is lower for women than men as women live a much greater share of their lives with some disabilities.

As people get older, the proportion of remaining years of life that they can expect to live free of disability falls. This is particularly the case among women. While women across EU countries could expect to live another 21 years when they reach the age of 65 in 2020, less than half of these years was free of activity limitations. For men, the remaining life expectancy at age 65 was almost four years shorter across EU countries (17.4 years), but they could also expect to live almost ten years free of disability, so the gender gap in healthy life years was very small (Figure 3.4).

A range of policies can contribute to increasing healthy life expectancy, including greater efforts to prevent health problems, promoting equal access to care, and better management of chronic health problems when they occur to reduce their disabling effects (OECD, 2017[2]).

Definition and comparability

Healthy life years are defined as the number of years spent free of long-term activity limitation (i.e. disability-free life expectancy). Healthy life years are calculated by Eurostat based on life table data and age-specific prevalence data on long-term activity limitations. The disability measure is the Global Activity Limitation Indicator, which measures limitation in usual activities based on the EU-SILC survey.

The comparability of data on healthy life years is limited by the fact that the indicator is derived from self-reported data which can be affected by people's subjective assessment of their activity limitation (disability) and by social and cultural factors. There are also differences across countries in the formulation of the survey question on disability in EU-SILC.

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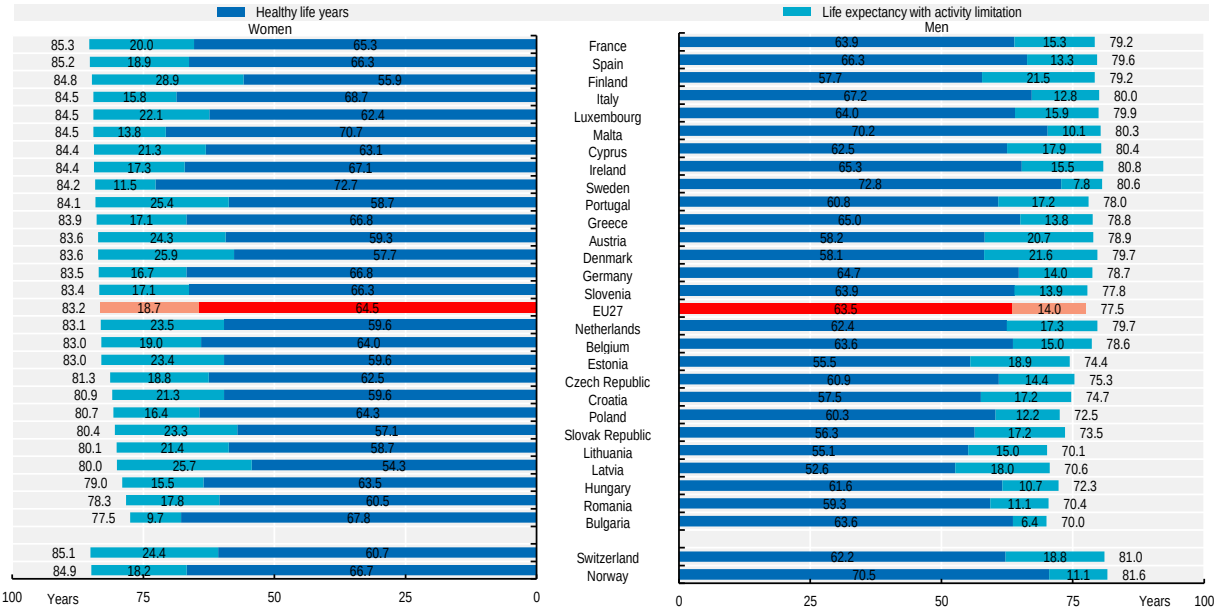
OECD (2017), *Preventing Ageing Unequally*, OECD Publishing, Paris, https://doi.org/10.1787/9789264279087-en. [2]

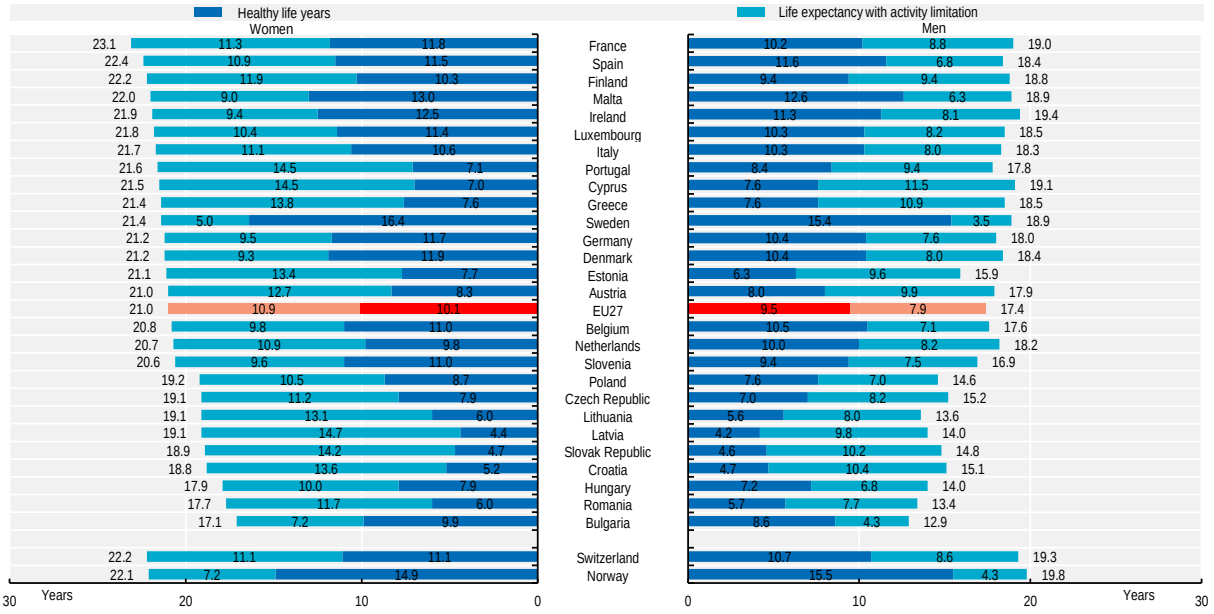
Figure 3.3. Life expectancy and healthy life years at birth, by gender, 2020 (or nearest year)



Note: The EU average is weighted. Data comparability is limited because of different formulations of the survey question in EU-SILC.
Source: Eurostat Database.

StatLink https://stat.link/1kcodu

Figure 3.4. Life expectancy and healthy life years at 65, by gender, 2020 (or nearest year)



Note: The EU average is weighted. Data comparability is limited because of different formulations of the survey question in EU-SILC.
Source: Eurostat Database.

StatLink https://stat.link/nlribo

COVID-19 mortality and excess mortality

While the vast majority of people who have been infected with COVID-19 have survived, the number of deaths related to the pandemic is striking. Over 1.1 million people have died from COVID-19 as of October 2022 across the 27 EU countries. Most deaths from COVID-19 (over 90%) have been among people aged over 60.

In absolute number, COVID-19 mortality up to the end of October 2022 in the EU was highest in Italy (179 000 deaths), France (171 000), Germany (154 000), Poland (117 000) and Spain (115 000). Outside the EU, over 200 000 died from COVID-19 in the United Kingdom. Relative to population size, COVID-19 mortality rates have been the highest in Bulgaria, Hungary, Croatia, the Czech Republic and Slovenia. They have been the lowest in Iceland and Norway (Figure 3.5). Cross-country differences generally reflect variations in the population age structure, the timing and effectiveness of containment strategies, the take-up of COVID-19 vaccination in 2021 and 2022, and differences in the capacity of health systems to treat COVID-19 patients.

Many Southern and Western European countries were hit hard from the outset of the pandemic in the spring 2020, while the impact started to be felt more strongly only in the fall 2020 in many Central and Eastern European countries. All EU countries experienced peaks in infections and deaths in late 2020 and early 2021. Mortality rates went up again in late 2021 and early 2022 in many countries, but have decreased afterwards in most countries.

The indicator of excess mortality suggests that data on COVID-19 mortality in many countries underestimate the mortality impact of the pandemic because of limited testing capacity (particularly at the beginning of the pandemic) and death recording practices. Excess mortality, defined as deaths from all causes over and above what could be expected based on mortality trends from previous years, is not affected by COVID-19 testing and recording practices. It can also account for deaths both directly and indirectly related to the pandemic. However, it also captures other events that can have a significant impact on mortality either in the years before the pandemic or during the pandemic, such as severe or mild flu seasons and heat waves. As time goes on, excess mortality also excludes older frail people who have died from COVID-19 but who would have died from another cause since the beginning of the pandemic (resulting in an under-estimation of deaths from COVID-19 in these cases).

In the EU, excess mortality since the beginning of the pandemic up to the end of June 2022 was 26% higher than reported COVID-19 deaths (Figure 3.6). This translates to about 300 000 additional deaths compared with the reported number of COVID-19 deaths that may be due either to the direct or indirect impact of the pandemic, or to other events. The difference between excess mortality and reported COVID-19 deaths was particularly large in Bulgaria, Romania, Poland, the Slovak Republic and Estonia, indicating that COVID-19 mortality data reported by these countries substantially undercounted the impact of the pandemic.

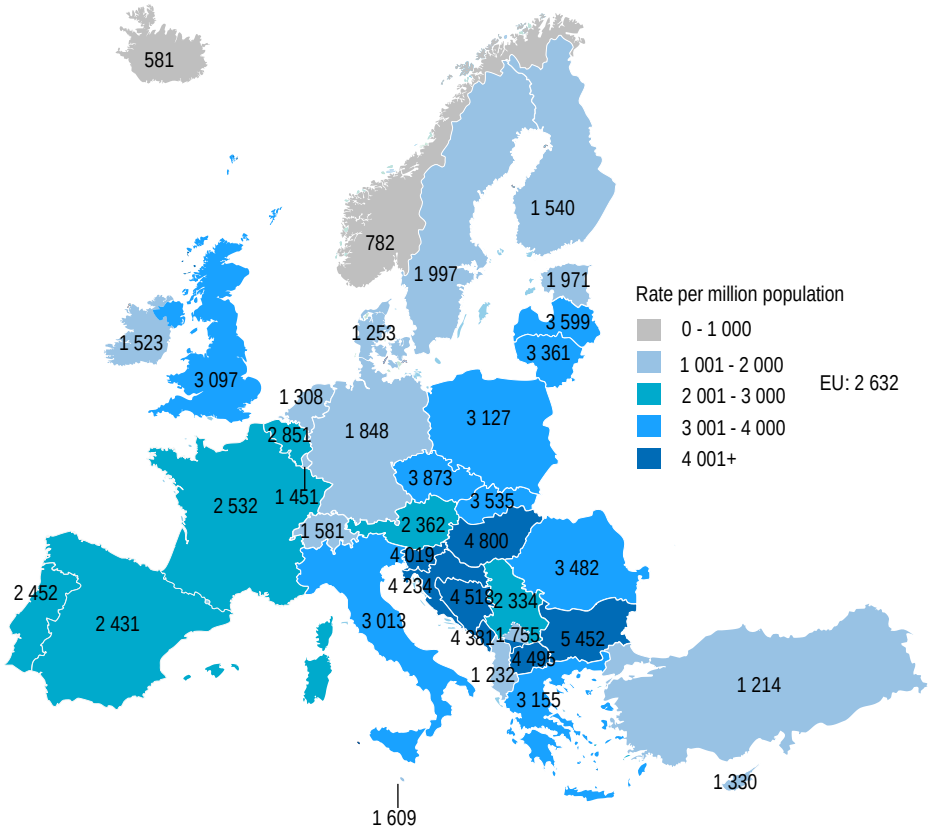
In some countries (e.g. Belgium, France, Hungary and Sweden), the gap between excess mortality and reported COVID-19 deaths is negative – meaning that the number of reported COVID-19 deaths is greater than the number of excess mortality. This indicates a more accurate reporting of COVID-19 deaths in these countries but also that deaths related to all causes besides COVID-19 have been lower during the pandemic than expected based on trends from previous years, for example because of fewer deaths from regular flu and road traffic accidents during confinement periods.

Definition and comparability

In ICD-10, COVID-19 mortality includes codes U07.1 when COVID-19 has been confirmed by laboratory testing and U07.2 when COVID-19 has been diagnosed clinically or epidemiologically but laboratory test is inconclusive or not available. The comparability of data on COVID-19 mortality is limited by differences in testing and death recording practices.

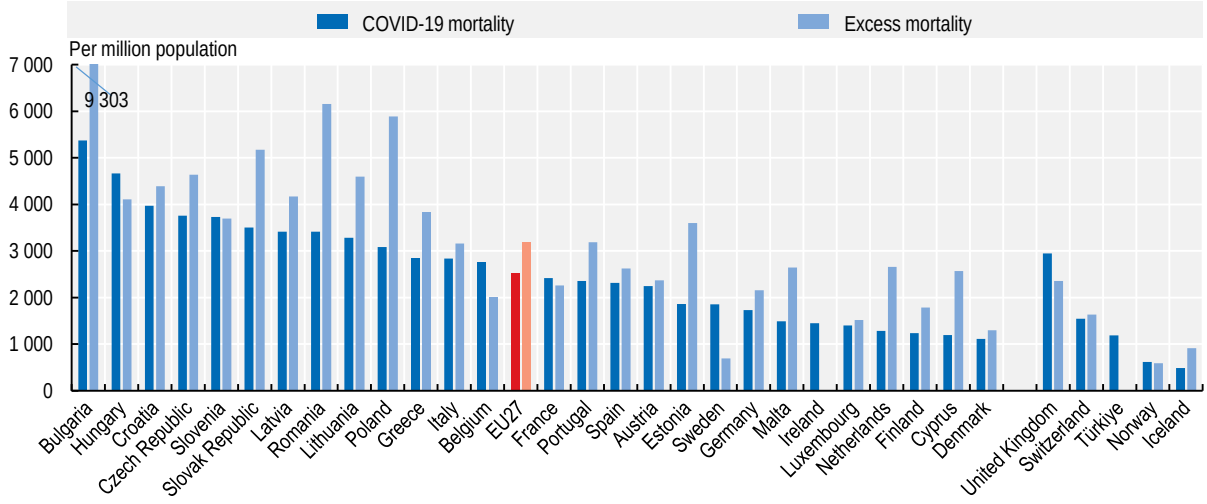
Excess mortality is defined and calculated by the OECD as the total number of deaths from all causes compared to the average annual number of deaths over the previous five years before the pandemic. In most countries, data to calculate excess mortality are available a few months later than the data on COVID-19 deaths.

Figure 3.5. COVID-19 mortality, March 2020 to October 2022



Note: Data are affected by countries' capacity to detect COVID-19 infections and recording and registration practices.
Source: ECDC.

Figure 3.6. COVID-19 mortality and excess mortality, March 2020 to June 2022



Note: The EU average is weighted. Data on COVID-19 mortality are affected by countries' capacity to detect COVID-19 infections and recording and registration practices.
Source: ECDC for COVID-19 mortality and OECD based on Eurostat data for excess mortality (data for Ireland and Türkiye not available).

StatLink https://stat.link/9oucd8

Main causes of mortality

In 2019 (before the pandemic), the two main broad causes of mortality in the EU were circulatory diseases, which accounted for over 1.6 million deaths or 35% of all deaths, and cancer, which accounted for almost 1.2 million deaths or 26% of all deaths (Figure 3.7). By comparison, COVID-19 accounted for 8% of all deaths in the EU in 2020 (over 400 000 deaths) and 10% of all deaths in 2021 (520 000 deaths). Survivors of severe COVID-19 are more likely to die from other causes.

Ischaemic heart diseases (including acute myocardial infarctions commonly called heart attacks and other diseases) and cerebrovascular diseases (strokes) are the most common causes of mortality from circulatory diseases, accounting for over half of deaths from this group of diseases in the EU (see indicator “Mortality from circulatory diseases”).

Lung cancer was the leading cause of cancer mortality in the EU in 2019, with about 235 000 deaths. The main risk factor for lung cancer is tobacco smoking. However, there are gender differences in cancer mortality. While lung cancer is the main cause of cancer death among men followed by colorectal cancer, breast cancer is the leading cause of cancer death among women followed by lung cancer (see indicator “Mortality from cancer”).

Respiratory diseases are the third cause of death in EU countries, leading to about 364 000 deaths in 2019 or 8% of all deaths. Chronic obstructive pulmonary disease (COPD) is the most common cause of mortality among respiratory diseases, followed by pneumonia. Tobacco smoking is also the most important risk factor for COPD.

External causes of death, including accidents, suicides, homicides and other violent causes of death, were responsible for 5% of all deaths among women and 6% of all deaths among men across EU countries in 2019. The most important causes of violent deaths are accidents (155 000 deaths in 2019, including about 27 000 deaths for transport accidents) and suicides (47 000 deaths). Transport accidents are a particularly important cause of death among young people (aged 18-25), whereas suicide rates generally increase with age.

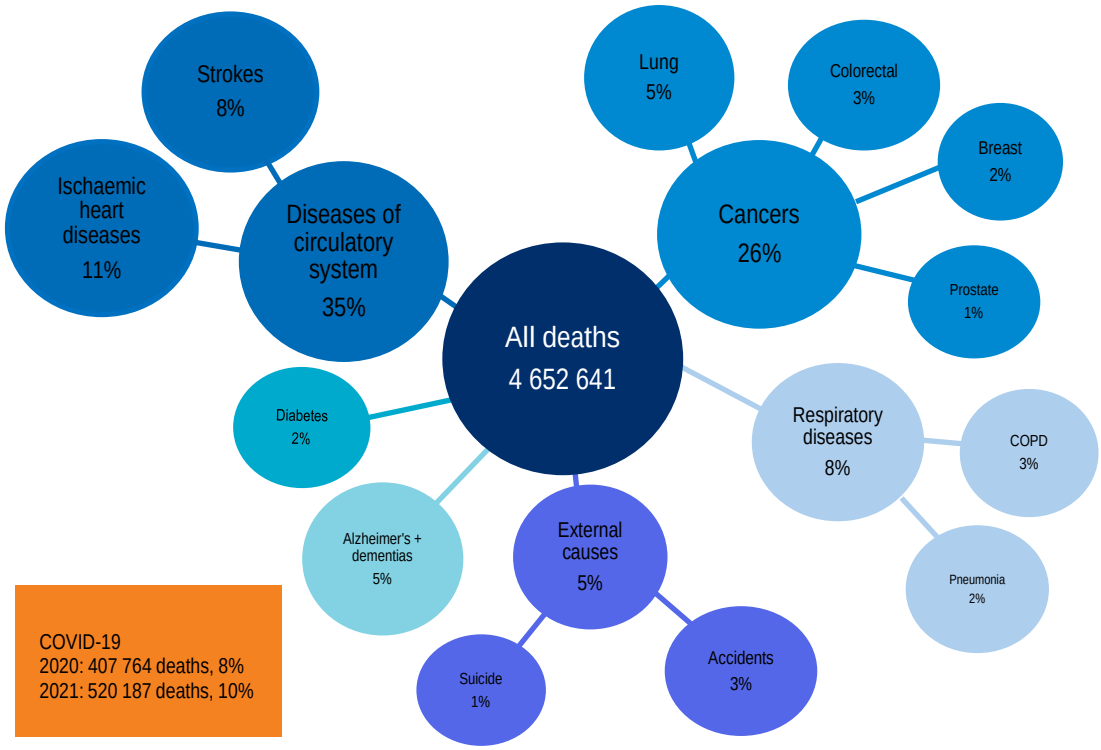
Looking at other specific causes, Alzheimer’s and other dementias accounted for 5% of all deaths in the EU in 2019, with the number of deaths for these ageing-related diseases increasing by over 50% in the decade up to 2019. Alzheimer’s and other dementias are a cause of death more important among women.

Overall mortality rates ranged from less than 830 deaths per 100 000 population in Spain, Italy and France, (which is about 15% lower than the EU average) to over 1 400 deaths per 100 000 population in Bulgaria, Romania, Hungary and Latvia (over 40% higher than the EU average) in 2019 (Figure 3.8). The main reason for the much higher mortality rates in this latter group of countries is higher mortality rates from circulatory diseases, the most common cause of death. In Hungary, higher cancer mortality rates also explain a large part of the difference with the EU average.

Definition and comparability

Deaths from all causes are classified to ICD-10 codes A00-Y89, excluding S00-T98. The grouping Alzheimer’s disease and other dementias include G30 (Alzheimer) and F01-F03 (other dementias). Mortality rates are based on the number of deaths registered in a country. The rates are age-standardised to the revised European standard population adopted by Eurostat in 2012 to remove variations arising from differences in age structures across countries and over time.

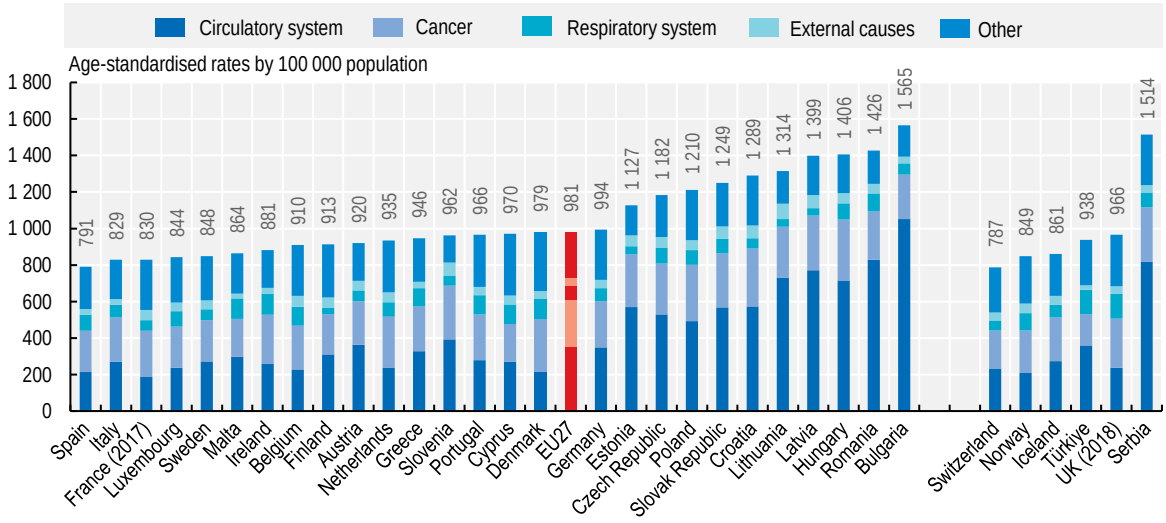
Figure 3.7. Main causes of mortality in EU countries, 2019 (or nearest year)



Note: The other causes of death not shown in this figure represent 18% of all deaths. Data refer to 2017 for France.
Source: Eurostat Database, complemented with OECD Health Statistics 2022 for COVID-19 mortality.

StatLink https://stat.link/zf7ice

Figure 3.8. Main causes of mortality by country, 2019 (or nearest year)



Note: External causes of death include accidents, suicides, homicides and other causes. The EU average is weighted (using 2017 data for France).
Source: Eurostat Database.

StatLink https://stat.link/aotj0d

Mortality from circulatory diseases

Circulatory (or cardiovascular) diseases remain the main cause of mortality in nearly all EU member states, accounting for over 1.6 million deaths (or 35% of all deaths) in the EU in 2019.

The two main causes of death from circulatory diseases are ischaemic heart diseases (notably acute myocardial infarctions) and cerebrovascular diseases (strokes). These two causes of death account for over half of all deaths from circulatory diseases, and about one-fifth of all deaths in EU countries in 2019.

Some 530 000 deaths were attributed to ischaemic heart diseases (IHD) across EU countries in 2019, accounting for one in nine deaths (11%). Death rates for IHD are twice higher for men than for women across EU countries, because of greater prevalence of risk factors among men, including smoking, hypertension and high cholesterol. Mortality rates from IHD are highest in Lithuania, Hungary, Latvia and the Slovak Republic, with age-standardised rates three to four times greater than the EU average. Countries with the lowest IHD mortality rates are France and the Netherlands, with death rates less than half the EU average (Figure 3.9).

Cerebrovascular diseases were responsible for about 355 000 deaths across the EU in 2019, accounting for one in 12 deaths (8%). Stroke mortality rates in Bulgaria, Latvia and Romania are three to four times higher than the EU average. They are the lowest in Luxembourg and France with death rates about half the EU average (Figure 3.10). The gender gap in mortality rates from stroke is not as large as for IHD (about 25% higher among men).

Steady and substantial reductions in mortality rates from IHD, strokes and other circulatory diseases were the main driver of increases in life expectancy in previous decades from the 1970s to the 2000s, but these reductions have slowed down over the past decade in several Western European countries such as France and Germany, as several risk factors are on the rise. Cholesterol, high blood pressure, low physical activity, obesity and diabetes are increasing in many EU countries (OECD/The King's Fund, 2020[1]).

There are wide socio-economic inequalities in mortality from circulatory diseases in most European countries, reflecting socio-economic differences in major risk factors. Among people aged 65-89, deaths from circulatory diseases accounted for over 40% of the gaps in mortality rates between those with low and high education levels on average across 14 EU and OECD countries around 2016. The relative contribution of circulatory diseases to these education gaps in mortality was particularly high in Hungary, Lithuania, Poland and the Slovak Republic (Murtin and Lübker, 2022[2]).

Since 2020, the pandemic has disrupted both non-urgent and urgent care for circulatory diseases and many other chronic conditions, especially during lockdowns (see Chapter 2). The pandemic may also contribute to a higher demand for care for circulatory diseases in the long run as COVID-19 infections may increase the risk of circulatory diseases (Katsoularis et al., 2021[3]).

Definition and comparability

Deaths from ischaemic heart diseases relate to ICD-10 codes I20-I25, and cerebrovascular diseases (strokes) to I60-I69. Mortality rates are age-standardised to the European standard population adopted by Eurostat in 2012.

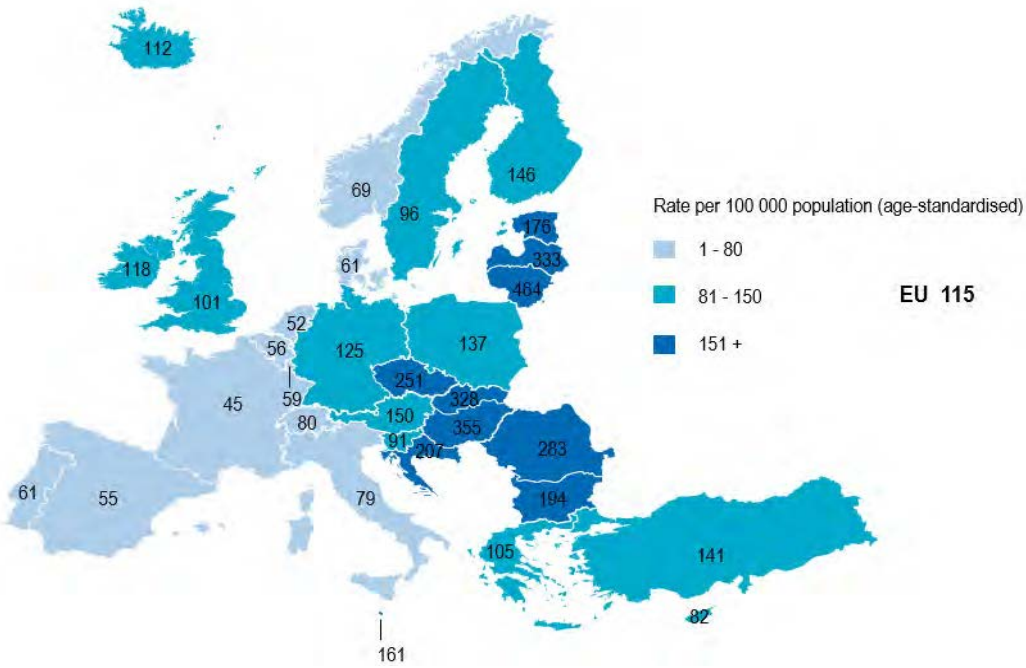
References

Katsoularis, I. et al. (2021), "Risk of acute myocardial infarction and ischaemic stroke following COVID-19 in Sweden: a self-controlled case series and matched cohort study", *The Lancet*, Vol. 398/10300, pp. 599-607, https://doi.org/10.1016/s0140-6736(21)00896-5. [3]

Murtin, F. and C. Lübker (2022), "Educational inequalities in longevity among OECD countries around 2016", *OECD Papers on Well-being and Inequalities*, No. 8, OECD Publishing, Paris, https://doi.org/10.1787/5faaa751-en. [2]

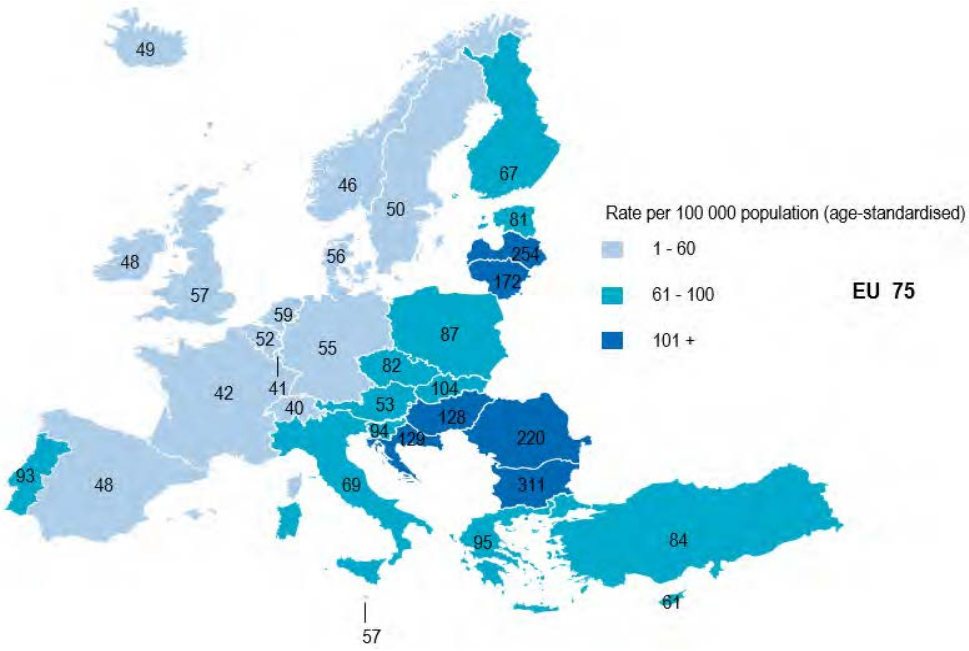
OECD/The King's Fund (2020), *Is Cardiovascular Disease Slowing Improvements in Life Expectancy?: OECD and The King's Fund Workshop Proceedings*, OECD Publishing, Paris, https://doi.org/10.1787/47a04a11-en. [1]

Figure 3.9. Ischaemic heart disease mortality, 2019 (or nearest year)



Note: The EU average is weighted (using 2017 data for France).
Source: Eurostat Database.

Figure 3.10. Stroke mortality, 2019 (or nearest year)



Note: The EU average is weighted (using 2017 data for France).
Source: Eurostat Database.

Mortality from cancer

In 2019, almost 1.2 million people died from cancer in EU countries, accounting for more than one in four (26%) of all deaths. Cancer is the second leading cause of mortality in the EU after cardiovascular diseases. Between 30-50% of cancer cases are preventable, and mortality can also be reduced through earlier diagnosis and the provision of more timely and effective treatments. The Europe's Beating Cancer Plan aims to reduce the burden of cancer and address cancer-related inequalities between and within countries, with actions to support, co-ordinate and complement the efforts of Member States (European Commission, 2022[1]).

Lung cancer remains by far the most common cause of death from cancer among men and the second most common among women (after breast cancer). Nearly 235 000 people died from lung cancer across EU countries in 2019. The main risk factor for lung cancer is tobacco smoking. Colorectal cancer is the second most common cause of cancer death, with about 138 000 people dying from colorectal cancer in the EU in 2019 (Figure 3.11).

However, breast cancer is the leading cause of cancer death among women, causing nearly 85 000 deaths in 2019 and accounting for 16% of all female cancer deaths. While incidence rates of breast cancer have increased in the decade before the pandemic, death rates have declined or stabilised, reflecting earlier diagnosis and better treatment.

Mortality rates from cancer are lowest in Cyprus, Finland, Sweden, Spain and Malta, with rates at least 10% lower than the EU average. They are highest in Hungary, Croatia, the Slovak Republic, Latvia Slovenia and Poland, with rates more than 15% higher than the EU average (Figure 3.12).

Cancer mortality rate is 75% higher among men than women across EU countries and mortality rates are at least twice higher in Lithuania, Latvia, Estonia, Portugal and Spain. There are also wide socio-economic inequalities in cancer mortality. Among men and women aged 65-89, deaths from cancer accounted for over 25% of the gaps in mortality rates between low and highly educated men and 15% of the gaps among low and highly educated women on average across 14 EU and OECD countries around 2016 (Murtin and Lübker, 2022[2]). A large part of these gender and socio-economic gaps can be narrowed by reducing risk factors such as smoking, obesity and alcohol consumption.

Since 2020, the pandemic has impacted cancer care, disrupting prevention, delaying diagnosis and treatment (see Chapter 2). For example, in Italy a study found that screening tests between January and May 2020 had been over 50% lower than in 2019 for mammography screening and colorectal screening across 20 regions. The estimate of undiagnosed lesions reached over 2 200 for breast cancer and nearly 3 900 for colorectal cancer (advanced colorectal adenomas) (Mantellini et al., 2020[3]).

Definition and comparability

Mortality from all cancers relate to ICD-10 codes C00-C97 (excluding non-melanoma skin cancer C44). The rates have been age-standardised to the revised European standard population adopted by Eurostat in 2012.

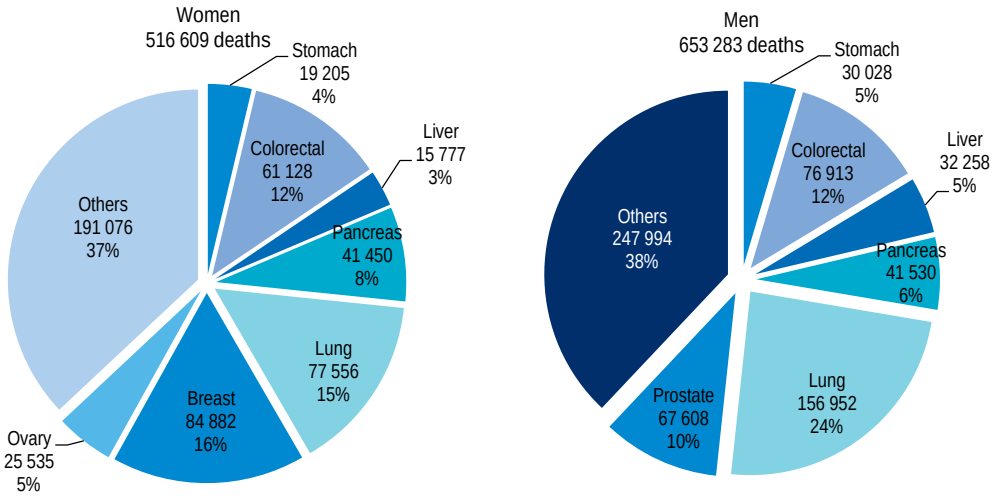
References

European Commission (2022), *Europe's Beating Cancer Plan*, https://health.ec.europa.eu/non-communicable-diseases/cancer_en. [1]

Mantellini, P. et al. (2020), "Oncological organized screening programmes in the COVID-19 era: an Italian survey on accrued delays, reboot velocity, and diagnostic delay estimates", https://doi.org/10.19191/EP20.5-6.S2.136. [3]

Murtin, F. and C. Lübker (2022), "Educational inequalities in longevity among OECD countries around 2016", *OECD Papers on Well-being and Inequalities*, No. 8, OECD Publishing, Paris, https://doi.org/10.1787/5faaa751-en. [2]

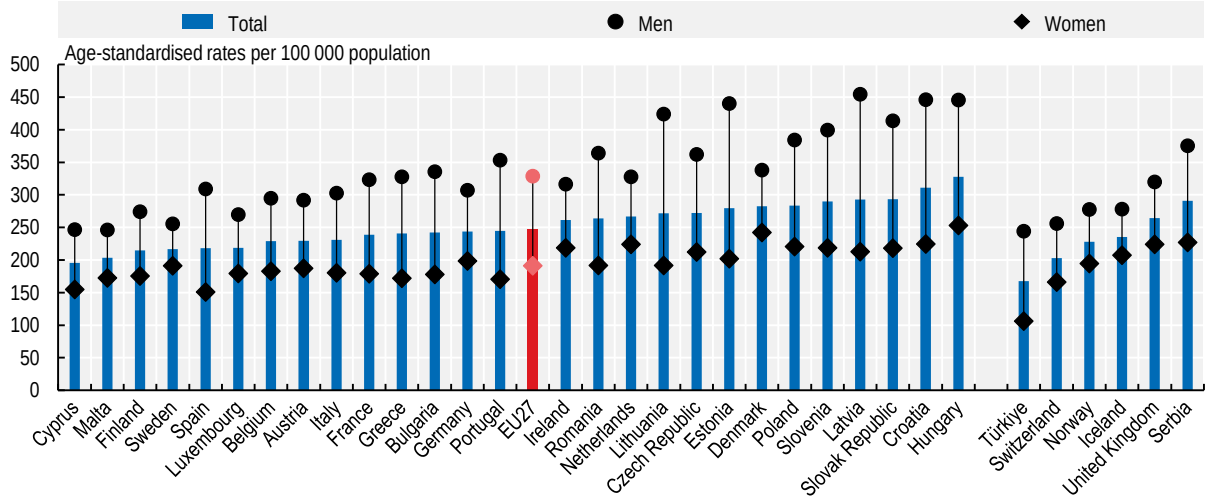
Figure 3.11. Cancer mortality in EU countries, 2019 (or nearest year)



Source: Eurostat Database.

StatLink https://stat.link/zmc7l6

Figure 3.12. Cancer mortality by gender, 2019 (or nearest year)



Note: The EU average is weighted (2017 data for France).
Source: Eurostat Database.

StatLink https://stat.link/fnqw7l

Adult mental health

Good mental health is vital for people's ability to live healthy and productive lives. Living with a mental health issue can have a significant impact on people's lives, contributing to worse educational outcomes, higher rates of unemployment, and poorer physical health.

The pandemic exacerbated many risk factors associated with poor mental health and weakened many protective factors, leading to an unprecedented worsening of mental health in the first two years. Early in the pandemic, the prevalence of anxiety and depression doubled in some European countries (OECD, 2021[1]); see also Chapter 1 for a discussion focusing on young people). Mental health was typically worst around pandemic peaks, with depression symptoms generally highest around the time of strict confinement measures.

Available data in some countries suggest that in the first half of 2022, depression symptoms were lower than during the peaks of 2020 and 2021, but remained higher than before the pandemic. In France, depression symptoms among adults peaked at over 20% during the lockdowns and were down to 15% in May 2022, a rate still higher than before the pandemic (13.5%). Similarly, in Belgium, while less than 10% of adults had depression symptoms in 2018, this proportion reached 20% and over during the pandemic peaks of 2020 and 2021 and decreased to 16% in March 2022.

In the first half of 2022, the mental health and well-being of many adults in EU countries remained affected by the ongoing impact and uncertainty around the pandemic, to which new issues such as rising cost-of-living and Russia's war against Ukraine have been added. Data from Eurofound's e-survey indicate that in the spring 2022, more than one in two people (55%) could be considered at risk of depression on average across EU countries (Figure 3.13). The share of people at risk of depression ranged from about 40% in Slovenia, Denmark and the Netherlands to about 65% in Poland, Greece and Cyprus. In nearly all countries, the share in the spring 2022 remained higher than in the spring 2020.

The risk of depression throughout the pandemic was higher among women, unemployed people, people with financial difficulties and younger people (Figure 3.14). The rate was nearly 60% among women, compared with 50% among men; nearly 70% among unemployed people, compared with slightly over 50% among those employed; 75% among those reporting financial difficulties compared with about 45% among those who did not report difficulties. Young adults reported poorer mental health than any other age group during the pandemic, a tendency that runs counter to pre-pandemic trends (see Chapter 2).

The pandemic heavily disrupted service delivery, although services were quickly adapted to new formats (e.g. online therapy). European governments have implemented a range of measures to protect and promote mental health, but unmet needs remain large (see Chapters 1 and 2).

Definition and comparability

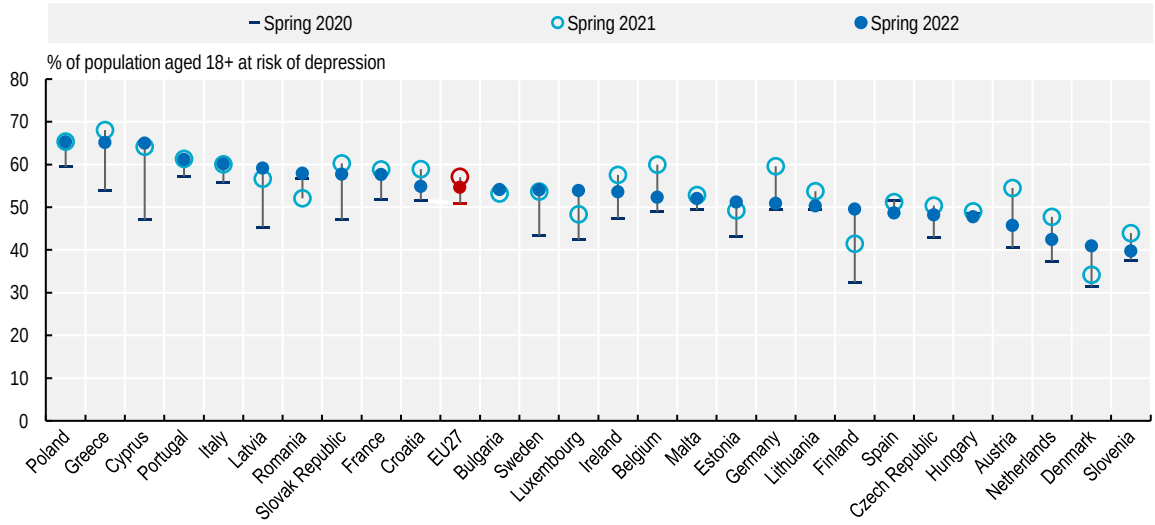
Data on risk of depression are based on different waves of Eurofound's *Living, working and COVID-19 e-survey*. Questions are based on the WHO module on mental health that includes five items: feeling cheerful, calm, active, rested, and that daily life is filled with interesting things. Responses are based on a 6-point scale ranging from "at no time" to "all of the time". Scores are aggregated to a total score from 0-100, where a higher value represents better mental well-being. People are considered to be at risk of depression if they scored below 50.

References

OECD (2021), *A New Benchmark for Mental Health Systems: Tackling the Social and Economic Costs of Mental Ill-Health*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/4ed890f6-en. [2]

OECD (2021), "Tackling the mental health impact of the COVID-19 crisis: An integrated, whole-of-society response", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://doi.org/10.1787/0ccafa0b-en. [1]

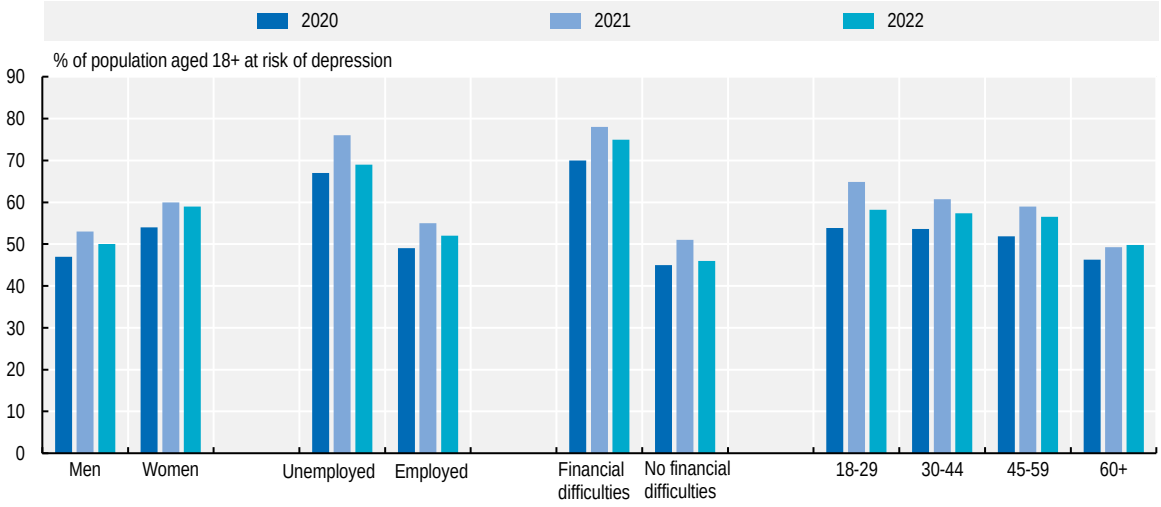
Figure 3.13. Share of adults at risk of depression, 2020-22



Note: A risk of depression is defined as people with a WHO-5 score of less than 50 on a scale from 0-100.
Source: Eurofound's *Living, working and COVID-19 e-survey*.

StatLink https://stat.link/qvcu7m

Figure 3.14. Share of adults in the EU at risk of depression among selected groups, 2020-22



Note: A risk of depression is defined as people with a WHO-5 score of less than 50 on a scale from 0-100.
Source: Eurofound's *Living, working and COVID-19 e-survey*.

StatLink https://stat.link/zy645u

Prevalence of diabetes and asthma

Chronic conditions are not only the leading causes of death in EU countries, but they also reduce the quality of life among people living with such chronic conditions, especially if the conditions are not properly managed. Many chronic conditions such as diabetes are preventable by reducing behavioural and environmental risk factors.

Diabetes is a chronic condition that occurs when the body is unable to regulate excessive glucose levels. If left undiagnosed or poorly controlled, it can result in serious complications, including blindness, kidney failure and lower limb amputation. Diabetes increases the risks of cardiovascular diseases. People with diabetes also have a greater risk of becoming severely ill if infected by COVID-19. Delays or postponement of regular care during the pandemic may have increased severe complications (see Chapter 2).

Over 7% of adults on average reported having diabetes in EU countries in 2019 (Figure 3.15). Rates varied from 9% or more in Croatia, Portugal and Finland to less than 5% in Ireland, Luxembourg and Romania. The prevalence of diabetes has increased at least slightly between 2009 and 2019 in all the 17 EU countries with data available from the three waves of the European Health Interview Survey (EHIS).

Adults with lower education level (who have not completed secondary education) are more than twice as likely to report having diabetes than those with higher education level on average across EU countries. This is partly due the fact that a higher proportion of lower-educated people is in older population groups. The prevalence of important risk factors for diabetes such as overweight and obesity is also much higher among the least-educated people (see indicator “Overweight and obesity among adults” in Chapter 4).

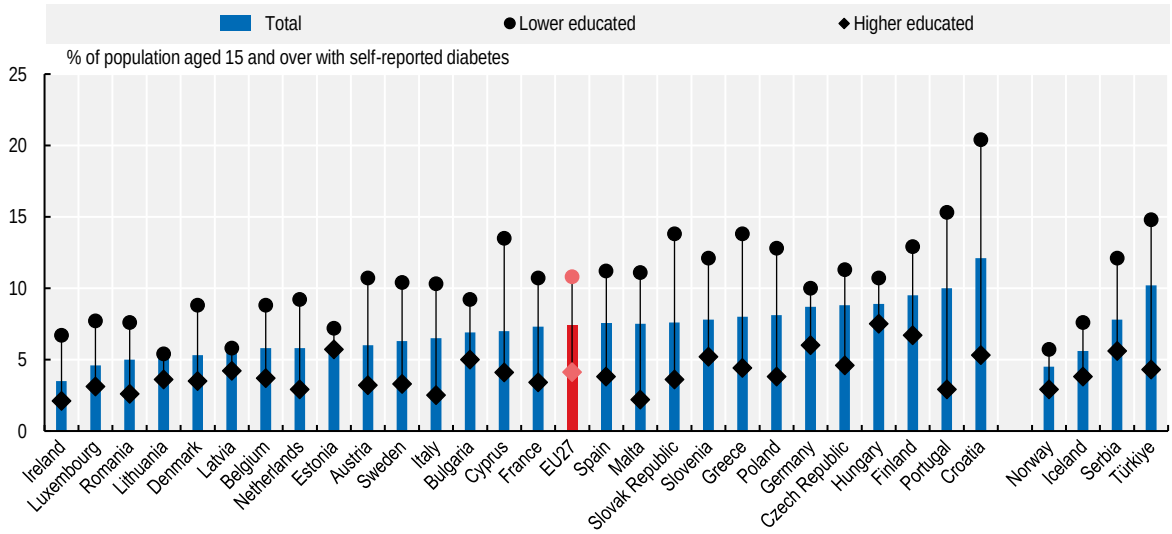
Asthma is a long-term condition that occurs when the air passages in the lungs become narrow due to inflammation and tightening of the muscles around the small airways. This causes cough, wheeze, shortness of breath and chest tightness, among other symptoms. Risk factors for asthma include air pollution, smoke, dust, viral infections (e.g. colds), and grass and tree pollen. While asthma cannot be cured, good management with inhaled medications can enable people to enjoy a normal life.

About 6% of people in the EU reported having asthma in 2019 (Figure 3.16). Rates varied from about 8% or more in Finland, Germany and France to about 2% or less in Romania and Bulgaria. In most countries, the prevalence of asthma is higher among lower-educated people than higher-educated people. The prevalence of asthma has remained relatively stable between 2009 and 2019 in the majority of the 17 EU countries with data available from EHIS, although it has increased in a few countries (such as Germany, Estonia and Latvia).

Definition and comparability

The European Health Interview Survey (EHIS) asks people aged 15 and over to report whether they had some chronic conditions in the past 12 months. Diabetes (excluding gestational diabetes) and asthma are included in a list of 15 chronic conditions. The rates are not aged-standardised. Lower and higher education levels are based on ISCED-2011 and refer to less than primary and lower secondary education, and tertiary education, respectively.

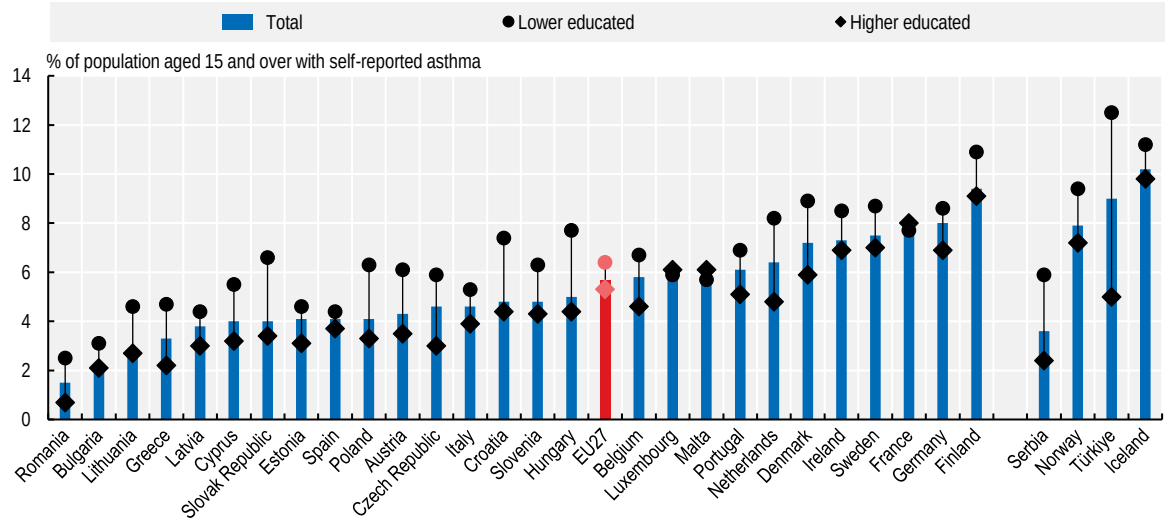
Figure 3.15. Prevalence of diabetes, by education level, 2019



Note: The EU average is weighted. Lower educated is defined as people with no more than lower secondary education, while higher educated is defined as those with a tertiary education degree.
Source: Eurostat Database, based on the European Health Interview Survey (wave 3).

StatLink https://stat.link/unfz18

Figure 3.16. Prevalence of asthma, by education level, 2019



Note: The EU average is weighted. Lower educated is defined as people with no more than lower secondary education, while higher educated is defined as those with a tertiary education degree.
Source: Eurostat Database, based on the European Health Interview Survey (wave 3).

StatLink https://stat.link/u59kl4

Chronic diseases and disabilities among older people

While the current generation of older people can expect to live much longer than previous generations, many years of life in old age are lived with some chronic diseases and disabilities. Based on the Survey on Health, Ageing and Retirement in Europe (SHARE), 36% of people aged 65 and over reported having at least two chronic diseases on average across EU countries in 2020 (Figure 3.17).

Older women report having multiple chronic diseases more often than men (40% versus 32% on average), partly because they live longer. Disparities also exist by income group. On average across EU countries, 29% of people aged 65 and over in the highest income quintile reported at least two chronic diseases, compared with 44% for those in the lowest income quintile. This reflects the cumulative effect of more difficult living and working conditions and greater exposure to various risk factors for chronic conditions earlier in life.

Long COVID (also known as "post COVID-19 condition") will likely increase the prevalence of chronic diseases among both younger and older people in the coming years. While there is not yet one commonly accepted definition of long COVID, preliminary estimates indicate that at least 10% of people infected with COVID-19 experience some long COVID symptoms that last for more than one month (Expert Panel on effective ways of investing in health, 2022[1]).

Living with chronic diseases does not necessarily hinder older people from carrying on their usual activities. Nonetheless, on average across EU countries 26% of people aged over 65 reported in 2020 having at least one limitation in activities of daily living (ADL), such as eating or dressing, or instrumental activities of daily living (IADL), such as cooking or doing the laundry (Figure 3.18).

Women more often report at least one ADL or IADL limitation in all EU countries (30% of women and 22% of men on average). This is mainly due to the fact that women report more chronic diseases with disabling effects, such as arthritis. There are also large disparities in disability by income quintile: on average across EU countries, 19% of people aged over 65 in the highest income quintile reported at least one ADL or IADL limitation compared with 35% among those in the lowest income quintile.

Many older people with activity limitations require some long-term care at home or in institutions. The pandemic led to disruptions in the provision of long-term care, especially at the beginning. About 30% of long-term care recipients at home reported forgone or postponed care in June-August 2020 on average across 14 European countries (Rocard, Sillitti and Llena-Nozal, 2021[2]).

Definition and comparability

The question in SHARE to measure the prevalence of any chronic disease asks whether people have ever been told by a doctor that they have some chronic conditions. The data include people reporting Alzheimer's disease, cancer, chronic kidney diseases, chronic lung diseases, diabetes, heart attack, stroke, hip fracture, Parkinson's disease, stroke, rheumatoid arthritis and osteoarthritis.

The question on activity limitations relate to ADL and IADL limitations such as dressing, walking, bathing/showering, eating, getting in/out of bed, using the toilet, preparing meals, doing groceries, taking medications and doing the laundry.

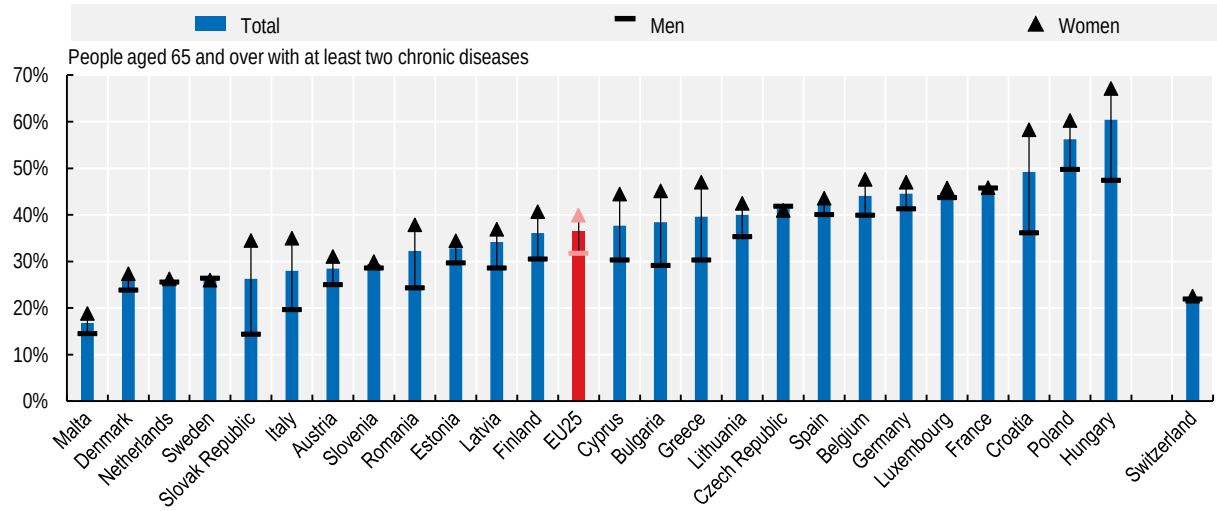
The survey excludes the population living in long-term care facilities, thereby resulting in an under-estimation of the true prevalence of chronic diseases and activity limitations.

References

EXPH (2022), *Expert Panel on effective ways of investing in health, draft opinion: Facing the impact of post-COVID-19 condition on health systems*. [1]

Rocard, E., P. Sillitti and A. Llena-Nozal (2021), "COVID-19 in long-term care: Impact, policy responses and challenges", *OECD Health Working Papers*, No. 131, OECD Publishing, Paris, https://doi.org/10.1787/b966f837-en. [2]

Figure 3.17. Multiple chronic diseases among people aged 65 and over, by gender, 2020



Note: The EU average is unweighted. The prevalence does not include people living in LTC facilities. Chronic diseases include Alzheimer's disease, cancer, chronic kidney diseases, chronic lung diseases, diabetes, heart attack, hip fracture, Parkinson's disease, stroke, rheumatoid arthritis and osteoarthritis.
Source: Survey of Health, Ageing and Retirement in Europe (wave 8).

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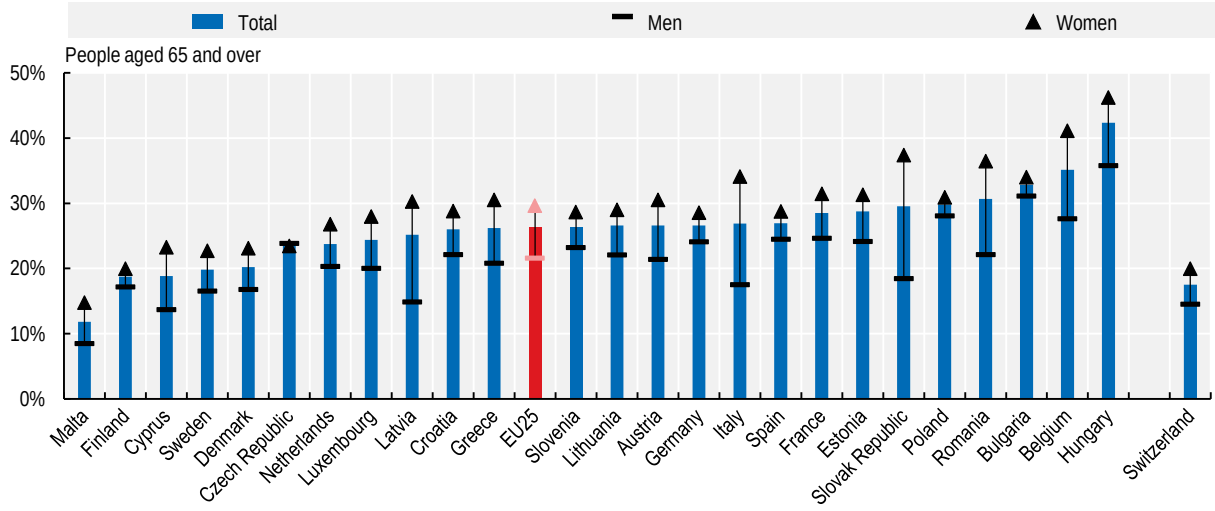
Figure 3.18. Limitations in daily activities among people aged 65 and over, by gender, 2020



Note: The EU average is unweighted. The prevalence does not include people living in LTC facilities.
Source: Survey of Health, Ageing and Retirement in Europe (wave 8).

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4 Risk factors

This chapter focuses on preventable risk factors to health among adolescents and adults, including smoking, alcohol consumption, illicit drug use, unhealthy nutrition, lack of physical activity, overweight, and environmental risk factors such as air pollution. While tobacco smoking and alcohol consumption have decreased over time, the use of new tobacco and nicotine products has increased, and harmful alcohol drinking patterns are widespread. Regarding nutrition and physical activity, less than one in eight European adults reported consuming the recommended five portions of fruit and vegetables a day in 2019, and less than one in three performed at least 150 minutes of physical activity per week. As a result, more than one in two European adults were overweight or obese in 2019. Air pollution also has serious public health consequences in EU countries, causing an estimated 300 000 deaths due to fine particulate matter pollution alone in 2019, although this number has reduced in most countries as emissions are declining.

Tobacco and cannabis smoking among adolescents

Smoking among adults

Alcohol consumption among adolescents

Alcohol consumption among adults

Illicit drug consumption among adults

Nutrition among adults

Physical activity among adults

Overweight among adults

Mortality due to air pollution

Tobacco and cannabis smoking among adolescents

Tobacco smoking in childhood and adolescence has both immediate and long-term health consequences, increasing the risks of cardiovascular diseases, respiratory illnesses and cancer in the long term. While cigarette smoking tends to decrease among adolescents, new tobacco and nicotine products (e.g. roll-your-own tobacco, heated tobacco, e-cigarettes) that are also harmful for health are emerging.

In recent years, cigarette smoking among adolescents has continued to decline in most EU countries, but at a slower pace. On average across EU countries, 21% of 15-16 year-olds reported having smoked cigarettes at least once in the past month in 2019 (Figure 4.1), a decrease of 3 percentage points compared with 2015 (24%). By comparison, the reduction was 8 percentage points between 2011 and 2015, from 32% to 24%.

Smoking rates in adolescents remain relatively high in some countries, reaching 30% or more in Romania, Bulgaria and Italy. Rates are lowest in Malta and Sweden as well as in Iceland and Norway (11% or less). Smoking rates in girls are higher than those in boys in most EU countries. On average in 2019, 22% of 15-16 year-old girls reported cigarette use in the past month compared with 20% of boys.

The Europe's Beating Cancer Plan has set out an ambitious goal to create a "tobacco-free generation" where less than 5% of the population uses tobacco by 2040 (European Commission, 2021[1]). Over the last years, a mix of policies have contributed to reducing smoking rates among children and adolescents, including increased taxes on tobacco products, restrictions on youth purchase, and more recently bans on characterising flavours in cigarettes and combined health warnings implemented under the Tobacco Products Directive (2014/40/EU). To further enforce the EU legislation on tobacco advertising, the European Commission recommends including new tobacco products and covering social media channels (European Commission, 2022[2]).

Cannabis is by far the most used drugs among adolescents. Frequent and heavy cannabis use during adolescence is linked to long-term increased risk of dependence and cognitive functioning problems, including memory loss and attention deficit disorders.

On average in EU countries, nearly 1 in 12 (8%) 15-16 year-olds reported smoking cannabis at least once in the past month in 2019 (Figure 4.2). This proportion ranged from 4% or less in Sweden, Romania and Finland, to over 13% in France, the Netherlands and Italy. The use of cannabis has decreased since 2015 in about half of EU countries, whereas it has increased in the other half.

EU countries are taking different legal and policy approaches to cannabis use. While most countries ban the use of cannabis, others decriminalise or legalise its use – either for medical or recreational purposes.

Definition and comparability

The data come from the European School Survey Project on Alcohol and Other Drugs (ESPAD). Data are drawn from school-based samples of students who reach the age of 16 years in the calendar year of the survey, ensuring that the sample is representative of the population. The data relate to the proportion of adolescents reporting to have smoked cigarette or cannabis at least once in the past 30 days.

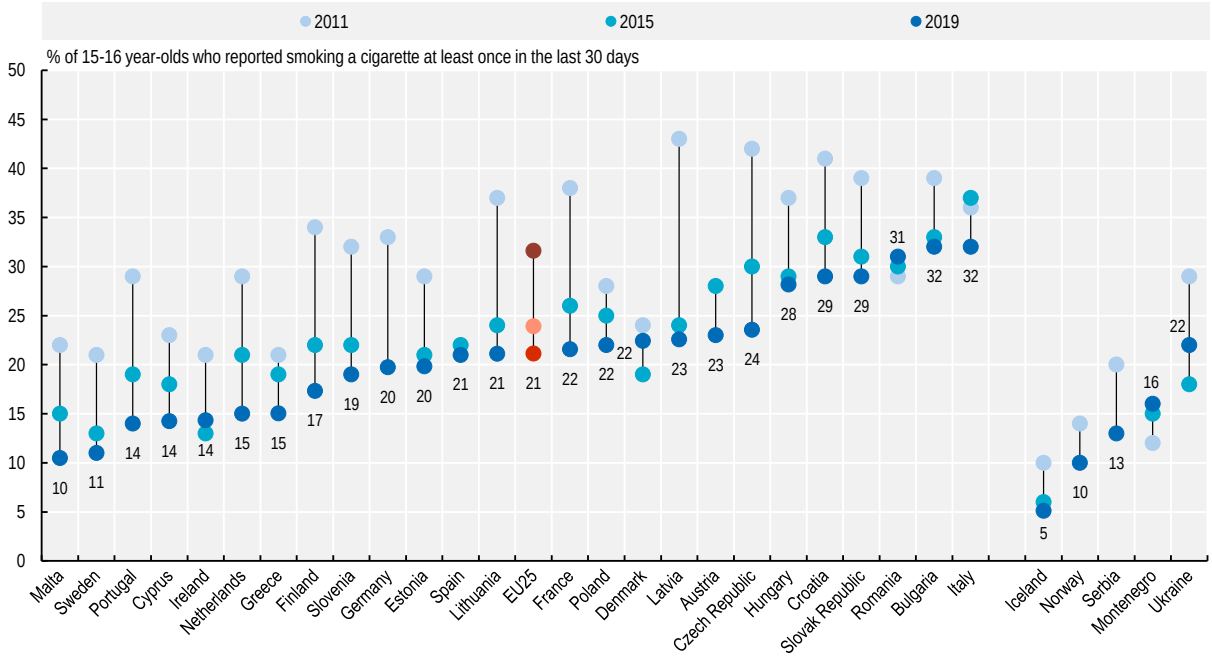
The data source on cigarette and cannabis use in this edition of *Health at a Glance: Europe* is different from the one used in the 2020 edition, which was based on the Health Behaviour in School-aged Children survey. This explains the difference in results.

References

European Commission (2022), *Leaflet on advertising, promotion and sponsorship of tobacco*, https://ec.europa.eu/health/latest-updates/leaflet-advertising-promotion-and-sponsorship-tobacco-2022-06-03_en. [2]

European Commission (2021), *Europe's Beating Cancer Plan - Communication from the commission to the European Parliament and the Council*, https://health.ec.europa.eu/system/files/2022-02/eu_cancer-plan_en_0.pdf. [1]

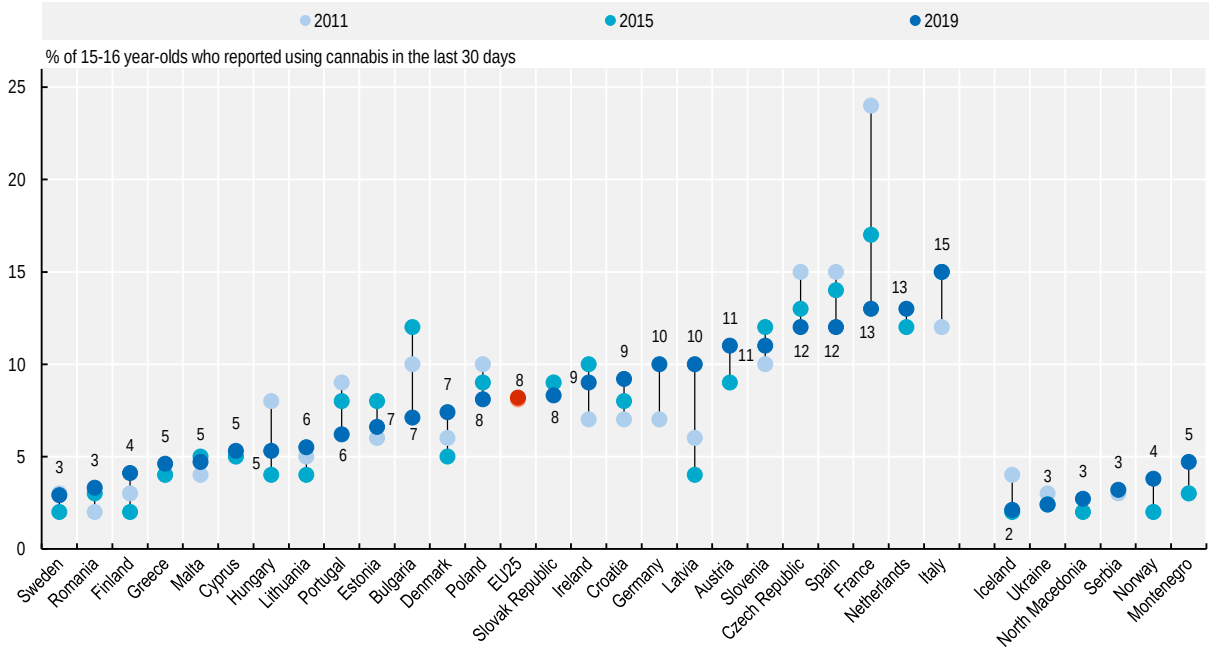
Figure 4.1. Tobacco smoking rates among 15-16 year-olds, 2011, 2015 and 2019



Note: The EU average is unweighted.
Source: ESPAD Group (2020), ESPAD Report 2019: Results from the European School Survey Project on Alcohol and Other Drugs.

StatLink https://stat.link/anku3x

Figure 4.2. Cannabis use among 15-16 year-olds, 2011, 2015 and 2019



Note: The EU average is unweighted.
Source: ESPAD Group (2020), ESPAD Report 2019: Results from the European School Survey Project on Alcohol and Other Drugs.

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Smoking among adults

Tobacco consumption is the largest avoidable behavioural risk factor to health in the EU and the most significant cause of premature death across EU countries, accounting for about 780 000 deaths in 2019 (IHME, 2021[1]). Tobacco use is a major risk factor for severe chronic respiratory diseases, circulatory diseases and cancer, causing over 80% of lung cancer in Europe.

Despite some progress in reducing smoking rates over the last decade, close to one in five adults (19%) still smoked daily in 2020 on average across EU countries. The proportion of adults who smoke daily is lowest in Nordic countries (Sweden, Finland, as well as Iceland and Norway) (12% or less) and at least two times higher in Greece, Hungary, France and Bulgaria (25% or above) (Figure 4.3). Estonia, Ireland, Finland, Denmark and Greece have achieved the largest reductions since 2010, with reductions of 7 or more percentage points.

During the COVID-19 pandemic, the proportion of people who smoked increased in some countries while it decreased in others. A study gathering data from 24 countries suggests that the proportion of smokers was lower during the COVID-19 pandemic than before. Among people who smoked, the majority did not change smoking behaviours, while similar proportions reported smoking more or smoking less (Sarich et al., 2022[2]).

Smoking remains more common among men than women in all EU countries (Figure 4.4). Nearly one in four men (24%) and one in seven women (15%) smoke daily on average in EU countries. This gender gap is particularly large in Latvia, Lithuania and Romania, as well as Moldova, Türkiye and Ukraine.

Across European countries, 3.6% of people used e-cigarettes or similar electronic devices daily or occasionally in 2019. The proportion is higher (5.1%) among those aged 15-24 (Figure 4.5). Regular use of e-cigarettes is more common among men than women in virtually all EU countries. On average, 4.5% of men aged 15 and over regularly used e-cigarettes compared with 2.6% of women in 2019. Among younger people, 6.4% of 15-24-years-old men regularly used e-cigarettes compared with 3.7% of women of the same age.

The European Commission calls for stronger actions to achieve the “Smoke-Free Generation” goal of the Europe’s Beating Cancer Plan, especially with regards to labelling, assessment of ingredients, cross-border sales, novel tobacco products such as heated tobacco products, and smoke-free environments including outdoor spaces (European Commission, 2021[3]; 2022[4]).

Definition and comparability

The proportion of daily smokers is defined as the percentage of people aged 15 years and over who report smoking tobacco every day. Other forms of smokeless tobacco products, such as snuff in Sweden, are not taken into account.

The use of electronic cigarettes or similar electronic devices (e.g. e-pipe, e-shisha) is defined as daily or occasional consumption. The data comes mainly from the European Health Interview Survey (EHIS 2019).

References

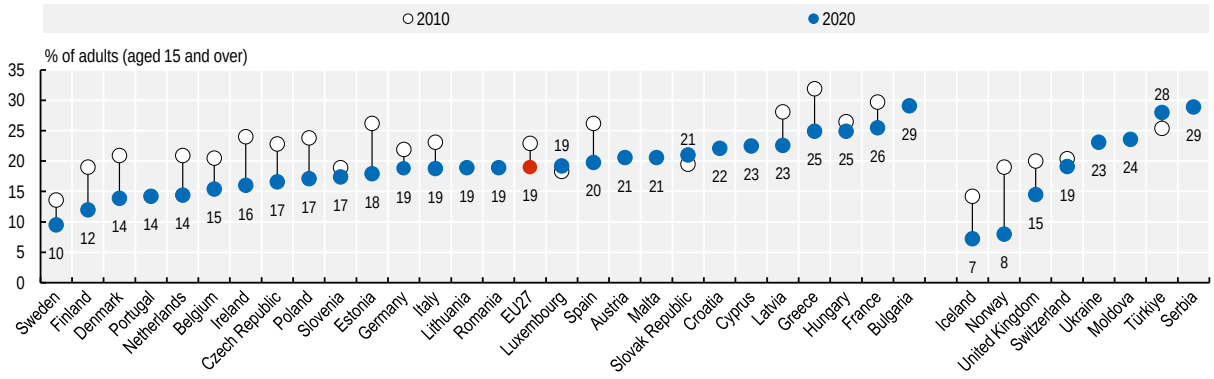
European Commission (2022), *Leaflet on smoke-free environments*, https://health.ec.europa.eu/latest-updates/leaflet-smoke-free-environments-2022-06-03_en. [4]

European Commission (2021), *EU Tobacco Products Directive is delivering but stronger action is needed*, https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2563. [3]

IHME (2021), *Institute for Health Metrics and Evaluation - VizHub - GBD Results*, https://vizhub.healthdata.org/gbd-results/. [1]

Sarich, P. et al. (2022), “Tobacco smoking changes during the first pre-vaccination phases of the COVID-19 pandemic: A systematic review and meta-analysis”, *EClinicalMedicine*, Vol. 47, https://doi.org/10.1016/J.ECLINM.2022.101375. [2]

Figure 4.3. Changes in daily smoking rates among adults, 2010 and 2020 (or nearest years)



Note: The EU average is unweighted. 2021 data for Denmark, Iceland, Ireland, Luxembourg and Norway.
Source: OECD Health Statistics 2022 (based on national or European health interview surveys).

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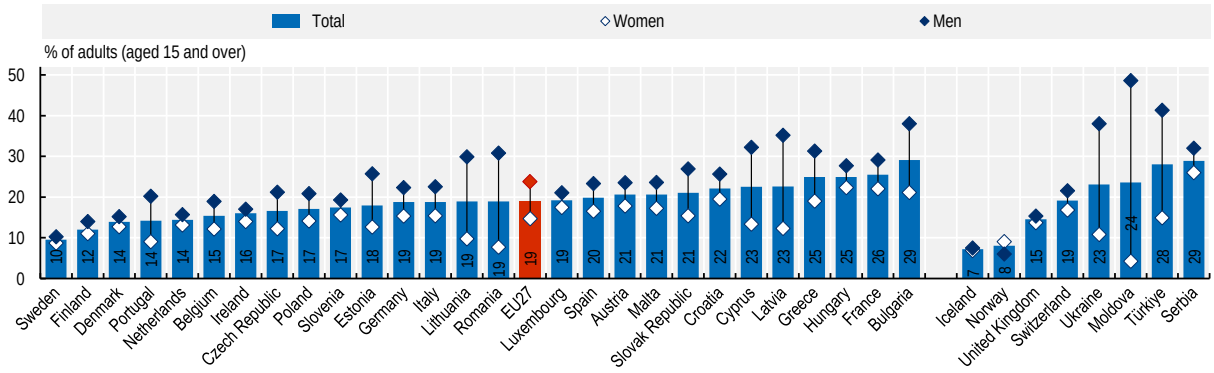
Figure 4.4. Daily smoking rates among adults, by gender, 2020 (or nearest year)



Note: The EU average is unweighted. 2021 data for Denmark, Iceland, Ireland, Luxembourg and Norway.
Source: OECD Health Statistics 2022 (based on national or European health interview surveys).

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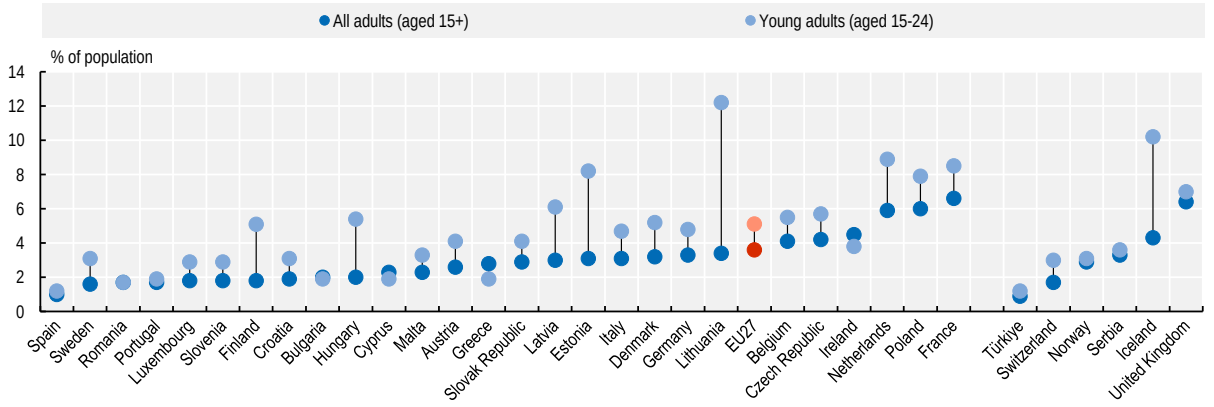
Figure 4.5. Regular use of e-cigarettes, by age group, 2019



Source: Eurostat, 2022 (EHIS 2019), complemented with national sources for Iceland, Switzerland and the United Kingdom.

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Alcohol consumption among adolescents

Heavy drinking in adolescence can have severe health, social, and educational consequences. Adolescent heavy episodic drinking is associated with a range of acute alcohol-related harms such as blackouts and injuries, car crashes, or increased risk for sexually transmitted infections. Alcohol use in adolescence is also related to poor educational outcomes, including bullying and social exclusion, which in turn may impact the formation of human capital (OECD, 2021[1]).

On average, more than one-third (37%) of European adolescents aged 15 and 16 years old reported heavy episodic drinking at least once in the last 30 days in 2019 (Figure 4.6), despite the legal drinking age in most EU countries being 18. This proportion ranges from less than 25% in Sweden, Finland, and Portugal, as well as Iceland and Norway, to more than 50% in Germany and Denmark.

In Denmark, adolescents have earlier access to alcohol than those in other Nordic countries, and alcohol control policies are also less stringent than across the Nordic Region. Indeed, the legal age for purchasing beer and wine in Denmark is lower, at 16 compared to 18 years. Further, sales of beverages containing alcohol up to 16.5% alcohol by volume are allowed in Danish supermarkets and other retail stores, while in Finland, Norway and Sweden, beverages containing above 3.5-5.5% alcohol can only be sold in government-owned monopoly stores.

In about half of EU countries, boys are more likely than girls to report heavy episodic drinking, with the greatest difference in Cyprus, Romania, and Greece (9 or more percentage points). Girls have higher rates than boys in the other half of EU countries, with the largest difference in Latvia and Spain (5 or more percentage points).

The proportion of heavy episodic drinking among adolescents has remained relatively stable between 2015 and 2019 on average across EU countries, although the trend has varied across countries. The proportion of 15-16 year-olds reporting heavy episodic drinking has decreased since 2015 in 15 of 25 EU countries. Cyprus, Lithuania and Malta saw the largest reduction with 7 percentage points or more. The proportion has gone up in the other 10 countries, with increases of 4 percentage points or more in Portugal, Ireland and the Slovak Republic (Figure 4.7).

Protecting children and adolescents from harmful alcohol use is a key pillar of public health policies. A multi-component strategy encompasses limiting accessibility of alcohol by enforcing the law on minimum legal age for purchasing and consuming alcohol, reducing alcohol affordability by limiting cheap alcohol, and restricting alcohol advertising (OECD, 2021[1]). To limit adolescent exposure to alcohol promotion, some countries have adapted their regulation to digital marketing and sport sponsorship. In the WHO Europe region, about half of the countries report monitoring marketing infringements, but only 14 out of 49 countries have marketing bans on the internet and on social media (WHO Europe, 2021[2]). Regarding sponsorship for sporting events, only four countries (Spain, France, Norway and Türkiye) have implemented legally binding bans across all alcoholic beverages (WHO, 2018[3]).

Definition and comparability

The data source is the European School Survey Project on Alcohol and Other Drugs (ESPAD). The data relate to the proportion of adolescents aged 15-16 years old reporting heavy episodic drinking at least once in the last 30 days. Heavy episodic drinking is defined as having five or more drinks on one occasion.

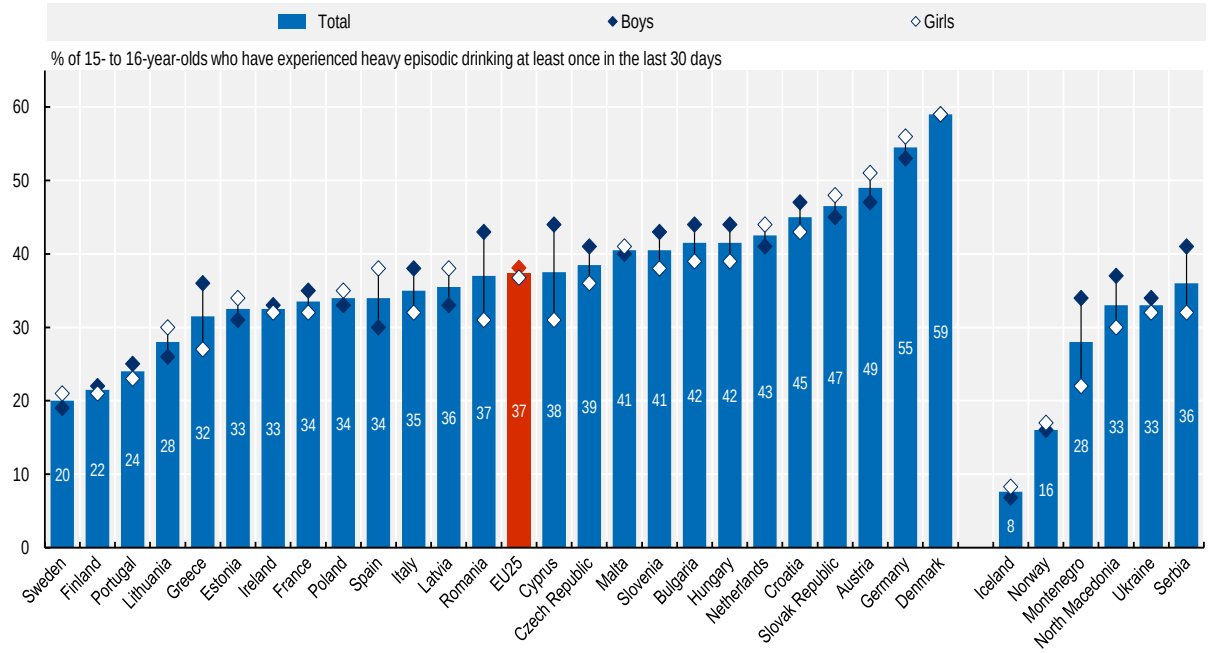
References

OECD (2021), *Preventing Harmful Alcohol Use*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/6e4b4ffb-en. [1]

WHO (2018), *Global Information System on Alcohol and Health (GISAH): Sporting events by country*, World Health Organization, https://apps.who.int/gho/data/node.gisah.A1168?lang=en&showonly=GISAH. [3]

WHO Europe (2021), *Digital marketing of alcohol: challenges and policy options for better health in the WHO European Region*, World Health Organization Regional Office for Europe, https://apps.who.int/iris/handle/10665/350186. [2]

Figure 4.6. Heavy episodic drinking among 15-16 year-olds, 2019



Note: The EU average is unweighted.
Source: ESPAD Group (2020), ESPAD Report 2019: Results from the European School Survey Project on Alcohol and Other Drugs.

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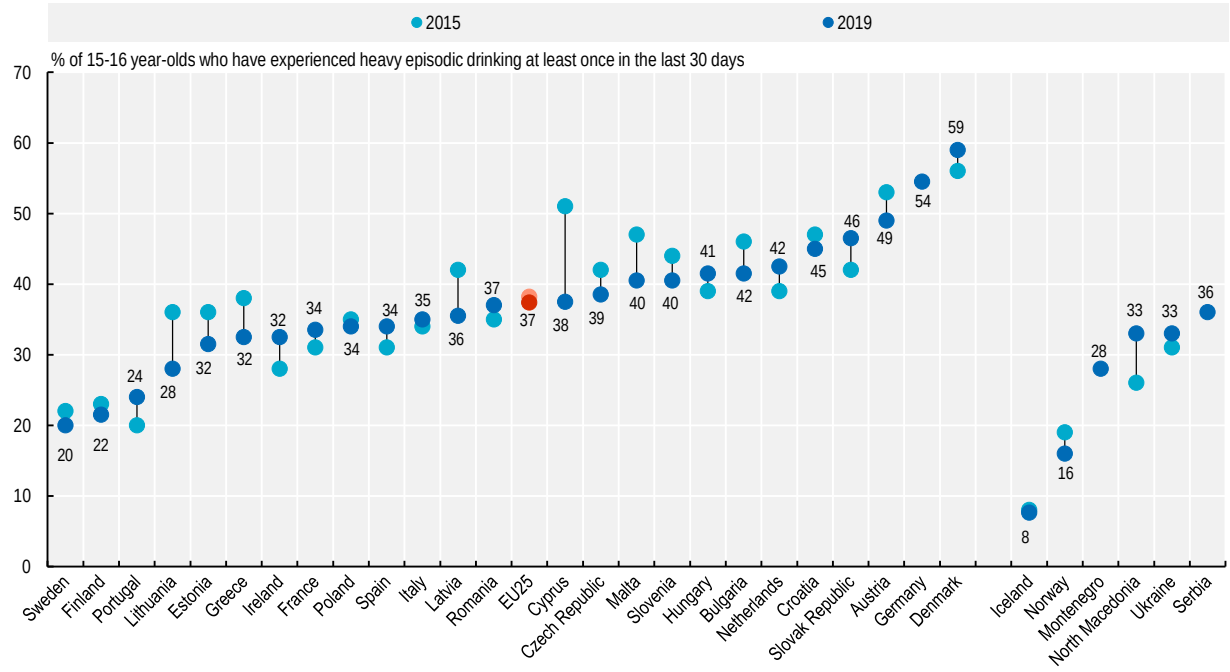
Figure 4.7. Trends in heavy episodic drinking among 15-16 year-olds, 2015-19



Note: The EU average is unweighted. No data is available for Germany in 2015.
Source: ESPAD Group (2020), ESPAD Report 2019: Results from the European School Survey Project on Alcohol and Other Drugs.

StatLink https://stat.link/7yh5mb

Alcohol consumption among adults

High alcohol consumption is associated with increased risk of heart diseases, stroke, liver cirrhosis, certain cancers, but even low-risk alcohol consumption increases the long-term risk of developing such diseases. Alcohol use was responsible for about 295 000 deaths across EU countries in 2019 (IHME, 2021[1]).

Measured through sales data, overall alcohol consumption stood at 9.8 litres of pure alcohol per adult on average across EU countries in 2020, a slight reduction compared to 10.4 litres in 2010 (Figure 4.8). Latvia, the Czech Republic, Lithuania, Austria and Bulgaria show the highest levels of consumption, while Greece, the Netherlands and Sweden have relatively low levels among EU countries.

Over the past decade, alcohol consumption has decreased in most EU countries, with the largest reductions in Ireland, Lithuania, Greece and Spain. It has slightly increased in Latvia, Bulgaria, Poland, Romania and Malta, although it remains well below the EU average in Malta.

Nearly one in five adults (19%) reported heavy episodic drinking at least once a month in EU countries in 2019 (Figure 4.9), a proportion that has remained stable since 2014. This proportion varies from less than 5% in Cyprus and Italy to more than 35% in Romania and Denmark. In all countries, men were more likely than women to report heavy episodic drinking.

By contrast with many other risk factors, people with lower education levels do not have a higher rate of heavy episodic drinking in EU countries, except in Latvia. On average, 13% of people with less than upper secondary education reported heavy episodic drinking, compared to 20% or more of people with at least upper secondary or tertiary education (Figure 4.10). These differences largely reflect greater purchasing capacity: alcohol is more affordable for people with more education and higher incomes. However, when looking at alcohol-related harm, the burden is greater on people with lower socio-economic status.

Many European countries have implemented a range of policies to limit alcohol consumption, such as taxation, restrictions on alcohol availability and bans on alcohol advertising, but their effectiveness is hindered by poor implementation on the ground and limited resources (OECD, 2021[2]). The Europe's Beating Cancer Plan has identified reducing harmful alcohol as a priority, suggesting several actions, such as limiting online advertising and promotion, reviewing EU legislation on alcohol taxation and cross-border purchases, mandatory labelling of ingredient and nutrient content on alcoholic beverages by the end of 2022, and health warning by the end of 2023 (European Commission, 2021[3]).

Definition and comparability

Overall alcohol consumption is defined as annual sales of pure alcohol in litres per person aged 15 and over. The methodology to convert alcohol drinks to pure alcohol may differ across countries. Official statistics do not include unrecorded alcohol consumption, such as domestic or illegal production. The data in Estonia and Latvia is adjusted downward to account for tourist consumption. Alcohol consumption in Luxembourg is estimated as the average consumption in France and Germany.

The proportion of heavy episodic drinkers is defined as the share of adults aged 18 years and over who reported having had 60 grammes or more of pure ethanol (equivalent to 6 drinks or more) in a single occasion in the past 30 days. The data are from the European Health Interview Survey (EHIS 2019), compiled by Eurostat.

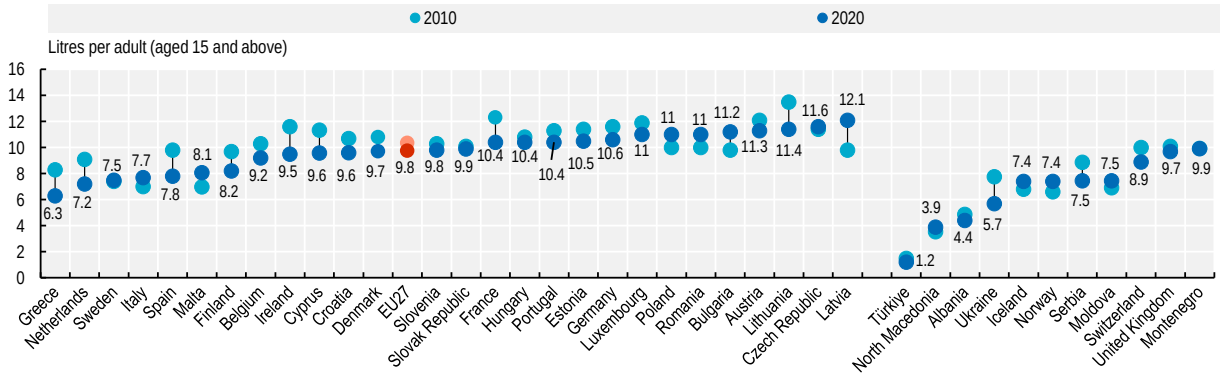
References

European Commission (2021), *Europe's Beating Cancer Plan - Communication from the commission to the European Parliament and the Council*, https://health.ec.europa.eu/system/files/2022-02/eu_cancer-plan_en_0.pdf. [3]

IHME (2021), *Institute for Health Metrics and Evaluation - VizHub - GBD Results*, https://vizhub.healthdata.org/gbd-results/. [1]

OECD (2021), *Preventing Harmful Alcohol Use*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/6e4b4ffb-en. [2]

Figure 4.8. Overall alcohol consumption among adults, 2010 and 2020 (or nearest year)



Note: The EU average is unweighted.
Source: OECD Health Statistics 2022 and WHO Global Information System on Alcohol and Health.

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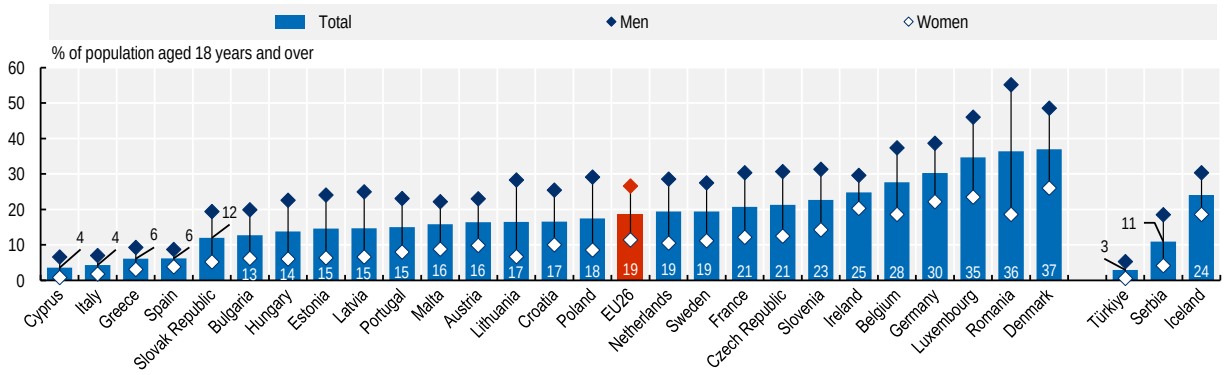
Figure 4.9. Proportion of adults who reported heavy episodic drinking, by gender, 2019



Note: The EU average is weighted.
Source: Eurostat, 2022 (EHIS 2019).

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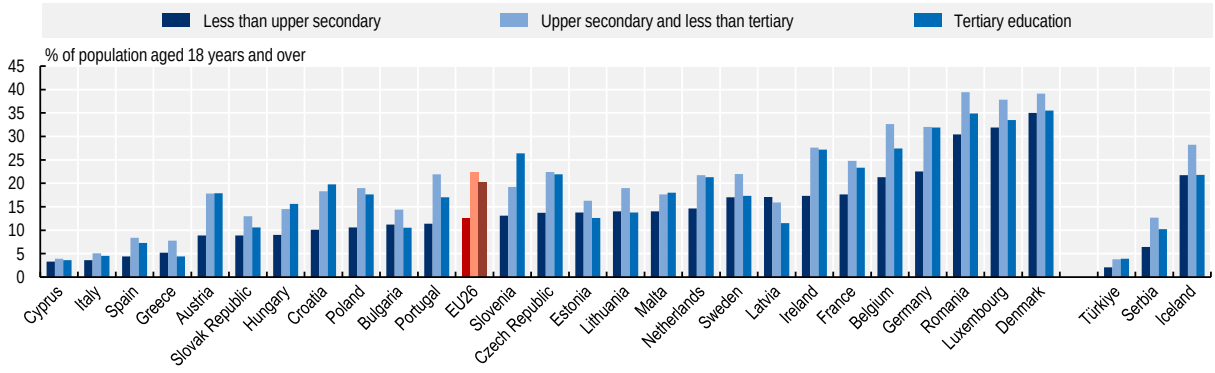
Figure 4.10. Proportion of adults who reported heavy episodic drinking, by education level, 2019



Note: The EU average is weighted. Ordered by values in the category "Less than upper secondary".
Source: Eurostat, 2022 (EHIS 2019).

StatLink https://stat.link/275bh9

Illicit drug consumption among adults

Drug use remain at high levels across the EU, although considerable differences exist between countries. Almost a third of adults have used illicit drugs at some point in their lives. The use of illicit drugs, particularly among people who use them regularly and in larger quantities, is associated with higher risks of cardiovascular diseases, mental health problems, accidents, as well as infectious diseases such as HIV when the drug is injected. Illicit drug use is a major cause of preventable mortality among young people in Europe, both directly through overdose and indirectly through drug-related diseases, accidents, violence and suicide (EMCDDA, 2022[1]).

Cannabis is the most used illicit drug among young adults in Europe, with around 15% of people aged 15 to 34 reporting having used cannabis in the last year in 2020 (Figure 4.11). Cannabis use is highest in the Czech Republic, France, Italy and Croatia. It is estimated that around 1% of European adults are daily or almost daily cannabis users; around three-quarters are males. The COVID-19 pandemic impacted cannabis use patterns, with more frequent herbal cannabis users consuming more, and infrequent users consuming less on average. In 2021, out of 31 cities in Europe with comparable data gathered by EMCDDA, 13 reported an increase in cannabis residues in wastewater samples.

Cocaine is the most commonly used illicit stimulant in Europe, with around 2.2% of adults aged 15 to 34 reporting having used cocaine in the last year (Figure 4.12). This proportion is highest in Austria, Croatia, France, Ireland, Spain and the Netherlands. While decreases in cocaine residues were observed in 2020 in most cities with data on municipal wastewater, data for 2021 show an increase in 32 out of 58 cities in Europe compared to 2020.

The use of amphetamines and MDMA/ecstasy is slightly lower than the use of cocaine, with about 1.4% of young adults reporting having used amphetamines and 1.9% MDMA/ecstasy in the last year. National estimates of use of new psychoactive substances among young adults aged 15-34 range from 0.1% in Latvia to 5.1% in Romania, although some of the variations can be explained by methodological differences (EMCDDA, 2022[1]).

The consumption of opioids (i.e. heroin and other drugs) is responsible for the majority of deaths by drug overdose. The main opioid used in Europe is still heroin, but there are concerns in several countries about the use of synthetic opioids. Among adults aged 15-64 years, 1 million are estimated to be high-risk opioid users (0.34% of the EU population).

Drug use is linked with, and complicates responses to, a wide range of today's most pressing health and social issues. Among these are mental health issues, self-harm, homelessness, youth criminality and the exploitation of vulnerable individuals (EMCDDA, 2022[1]).

Definition and comparability

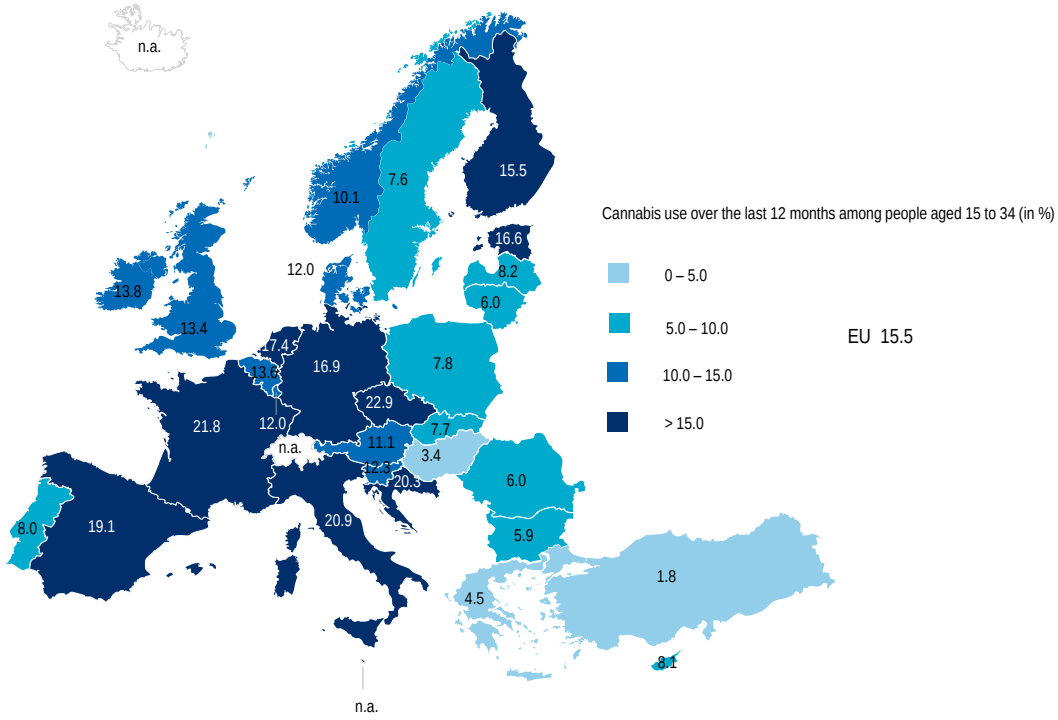
Data on drug use come from national population surveys, as gathered by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). The data focus on the percentage of young adults aged 15 to 34 reporting having used different types of illicit drugs in the last year. Such estimates of recent drug use produce lower figures than "lifetime experience", but better reflect the current situation. The information is based on the last survey available for each country. The study year ranges from 2015 to 2020. Data from wastewater-based epidemiology can provide complementary information to general population surveys and further insights into the use of drugs in Europe.

For more information, please see: https://www.emcdda.europa.eu/data/stats2022/gps_en.

References

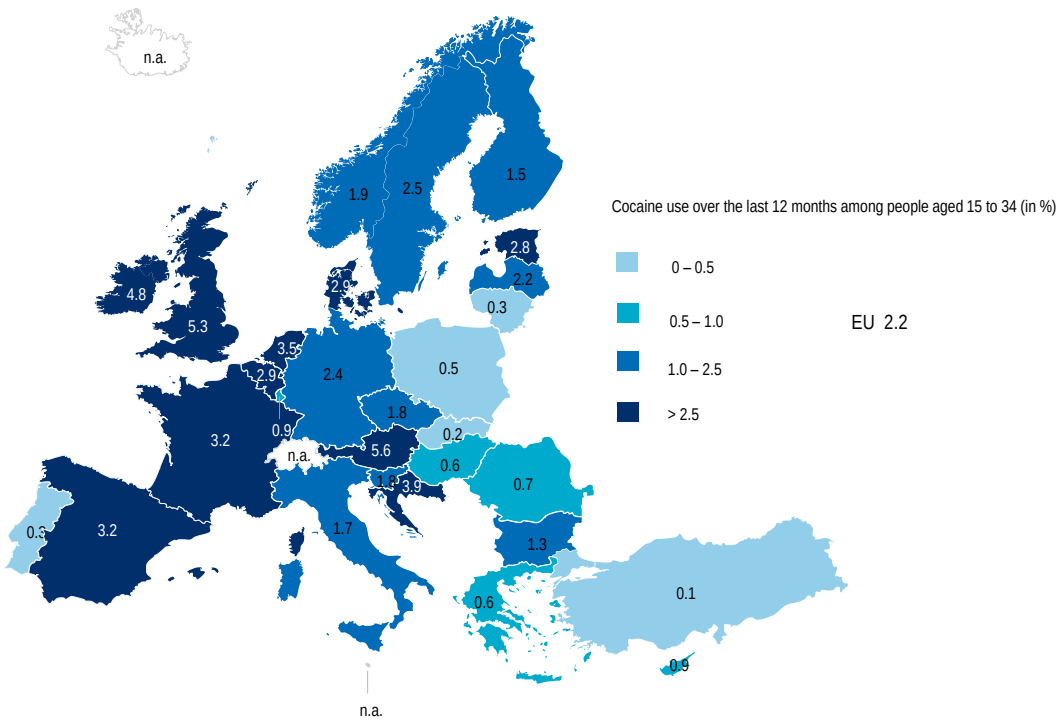
EMCDDA (2022), *European Drug Report 2022: Trends and Developments*, EMCDDA, Lisbon, https://www.emcdda.europa.eu/publications/edr/trends-developments/2022_en. [1]

Figure 4.11. Cannabis use in the last 12 months among people aged 15 to 34, 2020 (or nearest year)



Source: EMCDDA, 2022.

Figure 4.12. Cocaine use in the last 12 months among people aged 15 to 34, 2020 (or nearest year)



Source: EMCDDA, 2022.

Nutrition among adults

Regular consumption of fruit and vegetables is an important element of a healthy and balanced diet, and is associated with lower risk of cardiovascular diseases and certain types of cancer. The consumption of a minimum of five portions of fruit and vegetables daily is spotlighted in the EU-wide "5-a-day" campaign, which follows the WHO recommendation of at least 400g (i.e. five portions) of fruit and vegetables per day.

On average across the 27 EU member states, only 12% of adults reported consuming five portions or more of fruit and vegetables daily in 2019, while 55% reported consuming between one and four portions a day, and 33% indicated eating less than one portion a day. Countries with the highest proportions of adults reporting having daily intake of five portions or more of fruit and vegetables were Ireland, the Netherlands, Denmark and France. Conversely, Romania, Latvia, Luxembourg and the Czech Republic have the highest proportion of adults reporting less than one daily intake of fruit and vegetables (Figure 4.13).

Women are more likely than men to consume at least 5 or more portions of fruit and vegetables in all EU countries except Greece. The gender gap was widest in Denmark and Finland, and narrowest in Croatia, Cyprus, Greece and Romania (Figure 4.14).

Daily consumption of at least five portions of fruit and vegetables is consistently highest among adults with higher level of education compared to those with lower education attainment. Countries with the widest education disparities include Denmark, the Netherlands and Ireland (Figure 4.15).

The COVID-19 pandemic has led to possibly lasting changes in traditional food purchasing, preparation and consumption patterns, with both favourable and less favourable changes in dietary habits. On the positive side, some studies have reported increasing fruit and vegetable intake and a rise in cooking of home-made meals (EIT Food, 2021[1]). However, other studies have found increasing snack frequency and more restricted access to fresh products (Skotnicka et al., 2021[2]).

Interventions to promote healthy diets include subsidies for fresh fruit and vegetables, regulations on promotion of foods high in fat, salt and sugar, setting nutrient-based standards in school and public institutions, reformulation of products with high-levels of sugar, simple and informative front-of-pack labels, and youth programmes on nutrition education.

Following the launch of the 2020 EU Farm to Fork strategy, the European Commission plans to empower consumers to make more informed and healthy food choices by harmonising mandatory front-of-pack nutrition labelling and establishing nutrient profiles to restrict the promotion of foods high in fat, salt and sugar (European Commission, 2020[3]).

Definition and comparability

Data on consumption of fruit and vegetables relate to the share of adults (aged 18 and over) who report consuming a certain number of portions per day, excluding fruit or vegetable juices and potatoes. The category "0 portion" corresponds to those having less than a daily consumption of fruit and vegetables. In Belgium, 100% pure fresh fruit or vegetable juices are included.

Data are stratified by education level. As per the International Standard Classification for Education 2011, tertiary education refers to Levels 5-8 (short-cycle tertiary education, bachelor's degrees, master's degrees, doctoral degrees). The non-tertiary education group corresponds to the simple average of "less than upper secondary" and "upper secondary and less than tertiary" education.

References

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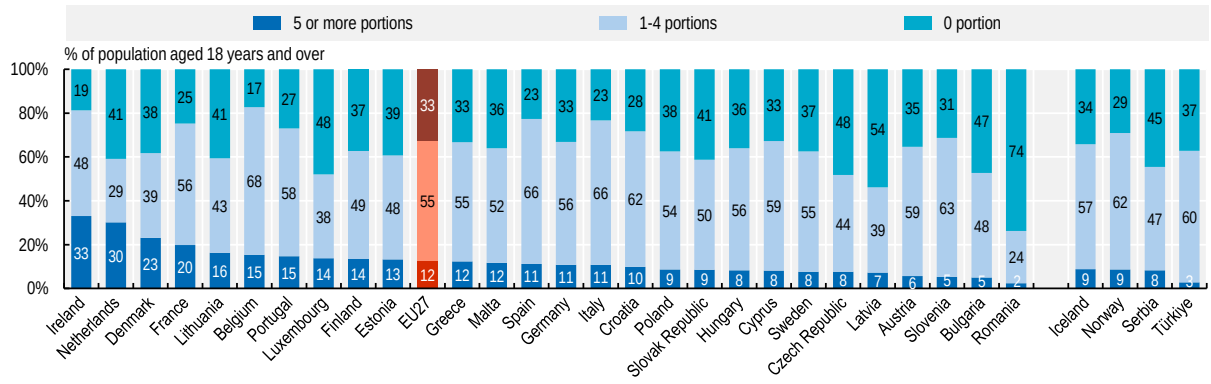
European Commission (2020), *Farm to Fork Strategy*, https://food.ec.europa.eu/system/files/2020-05/f2f_action-plan_2020_strategy-info_en.pdf. [3]

Skotnicka, M. et al. (2021), "Dietary Habits before and during the COVID-19 Epidemic in Selected European Countries", *Nutrients*, https://doi.org/10.3390/NU13051690. [2]

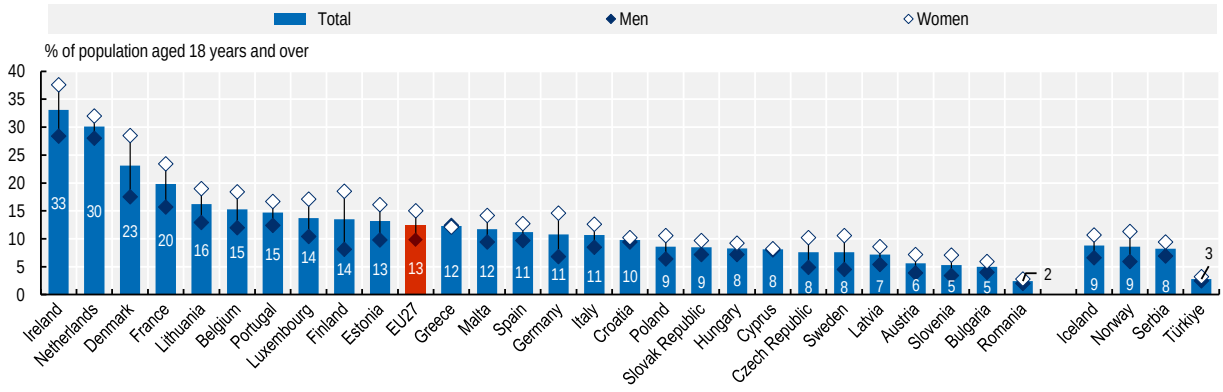
Figure 4.13. Daily consumption of fruit and vegetables among adults, 2019



Note: The EU average is weighted.
Source: Eurostat, 2022 (EHIS 2019).

StatLink https://stat.link/eiwls0

Figure 4.14. Daily consumption of 5 or more portions of fruit and vegetables among adults, by gender, 2019



Note: The EU average is weighted.
Source: Eurostat, 2022 (EHIS 2019).

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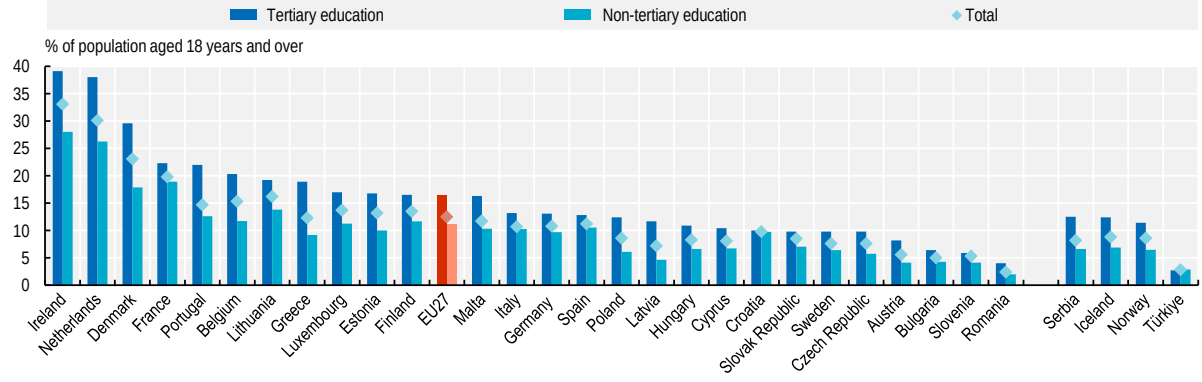
Figure 4.15. Daily consumption of 5 or more portions of fruit and vegetables among adults, by education level, 2019



Note: The EU average is weighted.
Source: Eurostat, 2022 (EHIS 2019).

StatLink https://stat.link/0w5u9f

Physical activity among adults

Being physically active is good for physical and mental health. Regular physical activity improves mental and musculoskeletal health, helps to manage weight, and reduces the risk of various non-communicable diseases. WHO recommends that adults perform at least 150 minutes of moderate-intensity physical activity per week and limit the amount of time spent being sedentary.

In 2019, about one-third (32%) of adults reported to perform at least 150 minutes of (non-work related) physical activity per week on average across EU countries (Figure 4.16). This proportion varies from 10% or less in Bulgaria and Romania, to more than 50% in the Netherlands, Sweden and Denmark as well as Norway and Iceland. Conversely, almost one in two European adults (48%) reported to perform no (non-work related) physical activity. This proportion varies from less than 20% in Denmark and Norway to more than 80% in Bulgaria and Romania.

A greater proportion of men reported to perform at least 150 minutes of weekly physical activity than women in virtually all countries except Denmark, Sweden, and Iceland. The gender gap is largest in the Czech Republic, France, the Slovak Republic, and Spain (Figure 4.17).

People with tertiary education are more likely than those with lower education levels to perform at least 150 minutes of physical activity per week in all EU countries. On average, 42% of people with tertiary education reported to perform at least 150 minutes of physical activity per week in 2019, compared to 27% of those with non-tertiary education (Figure 4.18). The education disparities are largest in Ireland, Slovenia, the Slovak Republic, and Iceland.

During the first year of the COVID-19 pandemic, the physical activity of most people declined and sedentary behaviours increased due to lockdowns (Stockwell et al., 2021[1]). For example, in France, a survey of 4 000 adults conducted during the first lockdown in April 2020 found that 45% reported a reduction in physical activity and 59% an increase in screen watching (Constant et al., 2020[2]).

The European Commission has launched in 2021 a *HealthyLifestyle4All* initiative to promote physical activity and sports across generations and social groups, inviting sports organisations, civil society, international, national, regional and local authorities to join in the co-creation of the initiative by submitting a pledge (European Commission, 2021[3]). Another European Commission's initiative is the *#BeActive Award* that rewards projects and individuals who are dedicated to the promotion of sport and physical activity. In 2022, the award includes a new category *#BeActive Across Generations Award* to recognise the importance of sport across different ages.

Definition and comparability

The indicator on physical activity refers to time spent on (non-work-related) physical activity, collected from the European Health Interview Survey 2019. In Germany, data collection for EHIS took place in 2019 and 2020. The data are categorised into three groups (at least 150 minutes per week, 1-149 minutes, and 0 minutes).

Data are stratified by education level. As per the International Standard Classification for Education 2011, tertiary education refers to Levels 5-8 (short-cycle tertiary education, bachelor's degrees, master's degrees, doctoral degrees). The non-tertiary education group corresponds to the average of "less than upper secondary" and "upper secondary and less than tertiary" education.

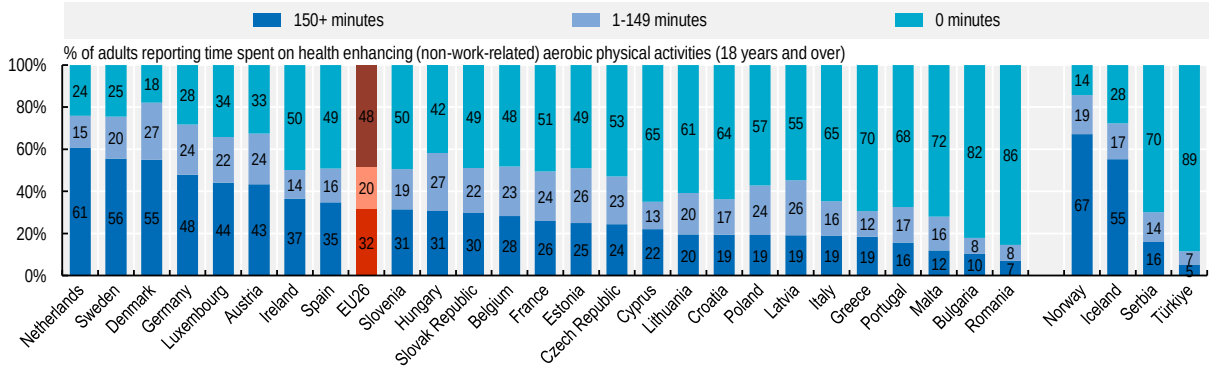
References

Constant, A. et al. (2020), "Socio-Cognitive Factors Associated With Lifestyle Changes in Response to the COVID-19 Epidemic in the General Population: Results From a Cross-Sectional Study in France", *Frontiers in Psychology*, https://doi.org/10.3389/fpsyg.2020.579460. [2]

European Commission (2021), *The HealthyLifestyle4All Initiative*, https://sport.ec.europa.eu/initiatives/healthylifestyle4all. [3]

Stockwell, S. et al. (2021), "Changes in physical activity and sedentary behaviours from before to during the COVID-19 pandemic lockdown: a systematic review", *BMJ Open Sp Ex Med*, Vol. 7, p. 960, https://doi.org/10.1136/bmjsem-2020-000960. [1]

Figure 4.16. Time spent on physical activity among adults, 2019



Note: The EU average is weighted.
Source: Eurostat, 2022 (EHIS 2019).

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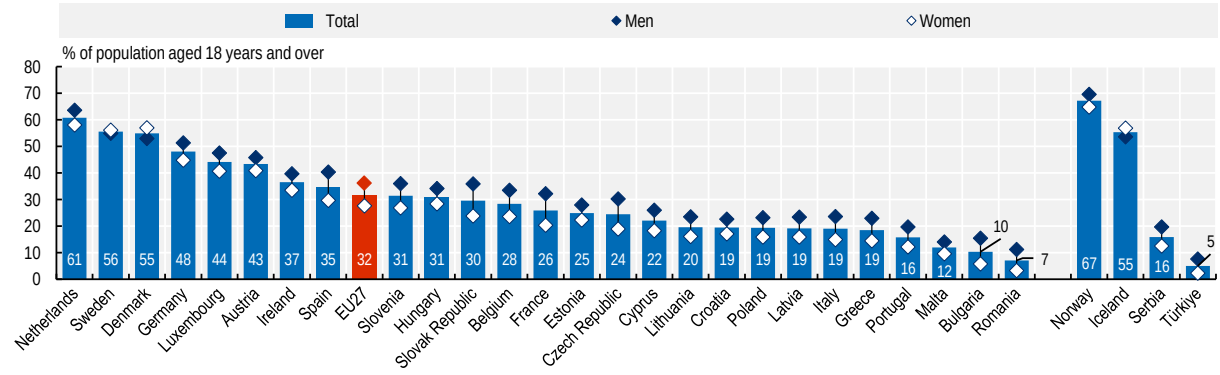
Figure 4.17. Spending at least 150 minutes per week on physical activity, by gender, 2019



Note: The EU average is weighted.
Source: Eurostat, 2022 (EHIS 2019).

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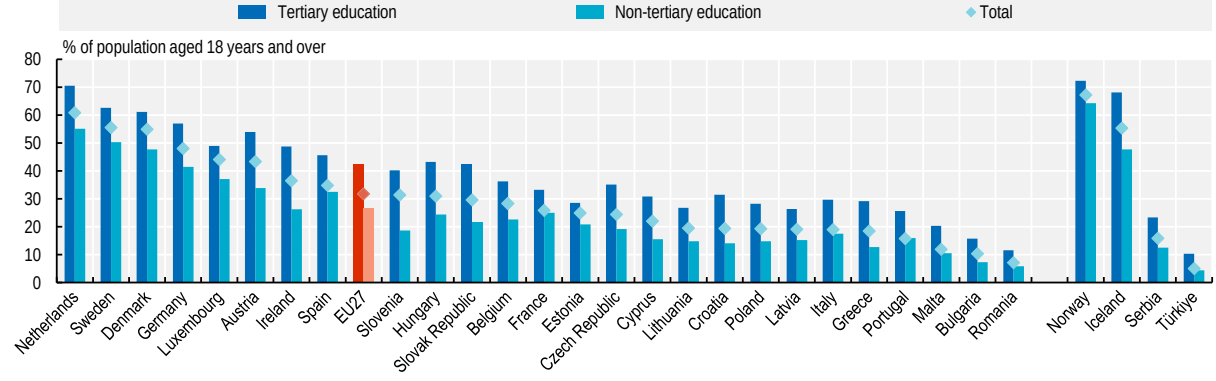
Figure 4.18. Spending at least 150 minutes per week on physical activity, by education level, 2019



Note: The EU average is weighted.
Source: Eurostat, 2022 (EHIS 2019).

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Overweight and obesity among adults

Being overweight is a major risk factor for various non-communicable diseases including diabetes, cardiovascular diseases and certain cancers. High consumption of calorie-dense food, trans-fats and saturated fats, and increasingly sedentary lifestyles have contributed to growing obesity rates in Europe and more globally, further challenged by new obesogenic digital food environments (WHO Europe, 2022[1]). Overweight might cause more than 320 000 premature deaths annually in EU countries over the next 30 years if no counter-measures are taken (OECD, 2019[2]).

In most EU countries, more than half of adults are overweight or obese. Between 2014 and 2019, overweight rates increased in virtually all countries, except France and Luxembourg where they remained stable. Austria, Croatia, Finland, Hungary, Slovak Republic saw the largest increases Figure 4.19.

Men are more likely than women to be overweight or obese in all EU countries. The gender gap is particularly large in Luxembourg and the Czech Republic (Figure 4.20).

People with a lower education level are also more likely to be overweight or obese than those with a higher education level in all EU countries (Figure 4.21). This difference was greatest in Portugal and Luxembourg. Differences in overweight prevalence across high and low educated people result in further inequality in health and employment outcomes. Individuals with at least one chronic disease associated with overweight are less likely to be employed; and when employed, they are more likely to be absent or less productive than healthy individuals (OECD, 2019[2]).

During the pandemic, overweight was associated with an increased risk of developing severe symptoms and dying from COVID-19 (Katz, 2021[3]).The mobility restrictions during the pandemic have also led to unfavourable shifts in eating behaviours and physical activity patterns. Indeed, this context offset gains made by policies promoting healthier lifestyles, accentuating the prevalence of obesity in European countries (WHO Europe, 2022[1]).

Countries have at their disposal comprehensive policy options to tackle overweight and obesity, ranging from health promotion and education to regulation. The EU Farm to Fork strategy and the Europe's Beating Cancer Plan call for revising EU rules on information provided to consumers. In particular, the EC will propose a harmonised mandatory front-of-pack nutrition label for food products, and establish nutrient profiles to restrict the promotion of food high in fat, salt or sugar (Laaninen, 2022[4]). Some food business operators have already reformulated products in preparation of the establishment of nutrient profiles.

Definition and comparability

The data is based on the European Health Interview Survey (EHIS 2019), compiled by Eurostat. Height and weight were self-reported by individuals. The body mass index (BMI) is obtained by dividing weight in kilograms by height in metres squared. Overweight corresponds to a BMI equal or greater than 25, and obesity BMI equal or greater than 30.

Data are stratified by education level. As per the International Standard Classification for Education 2011, tertiary education refers to Levels 5-8 (short-cycle tertiary education, bachelor's degrees, master's degrees, doctoral degrees). The non-tertiary education group corresponds to the average of "less than upper secondary" and "upper secondary and less than tertiary" education.

References

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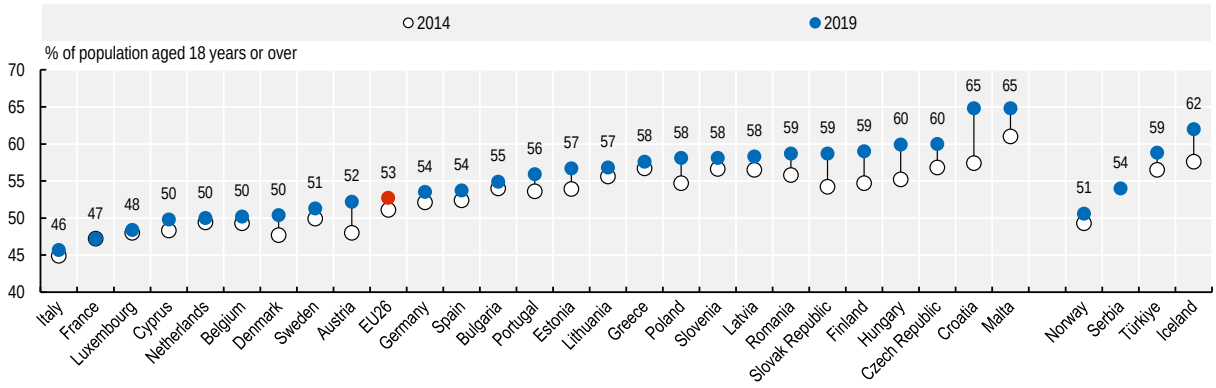
WHO Europe (2022), *WHO European Regional Obesity Report 2022*, World Health Organization Regional Office for Europe, https://apps.who.int/iris/handle/10665/353747. [1]

Figure 4.19. Overweight (including obesity) rates among adults, 2014 and 2019



Note: The EU average is weighted. No data is available for Ireland.
Source: Eurostat, 2022 (EHIS 2019).

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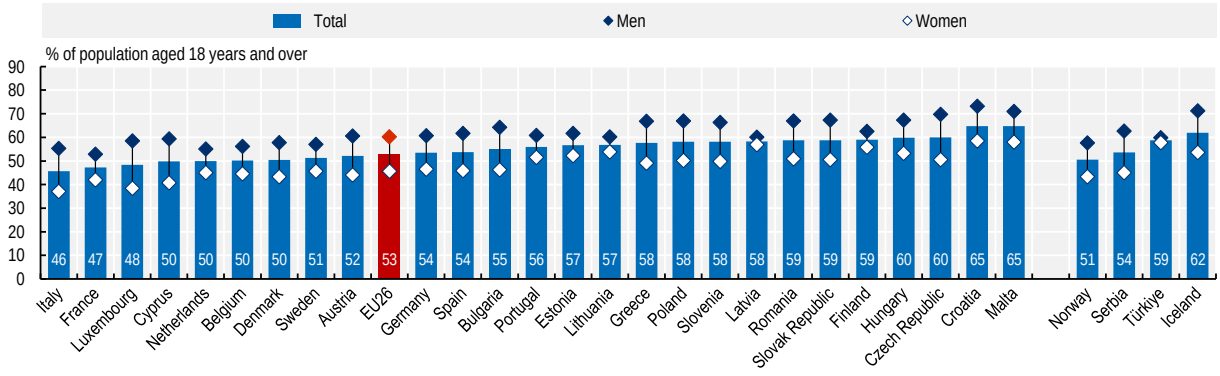
Figure 4.20. Overweight (including obesity) rates among adults, by gender, 2019



Note: The EU average is weighted. No data is available for Ireland.
Source: Eurostat, 2022 (EHIS 2019).

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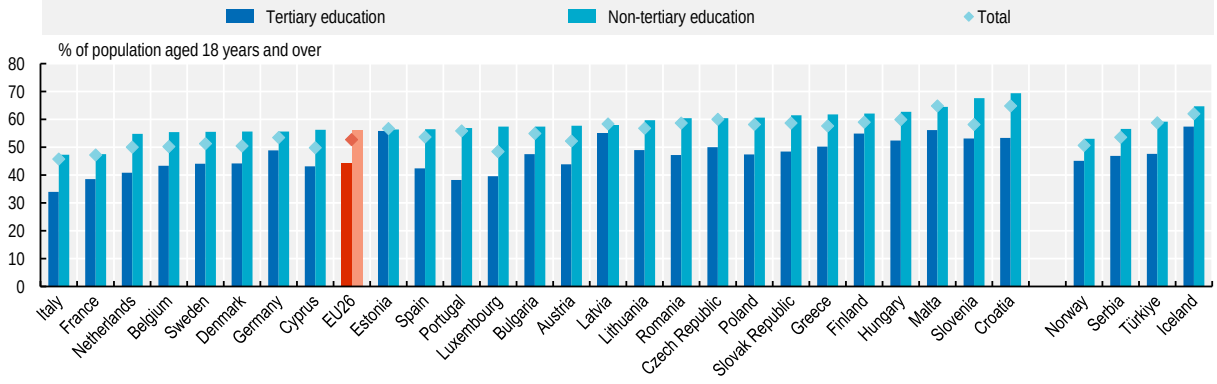
Figure 4.21. Overweight (including obesity) rates among adults, by educational level, 2019



Note: The EU average is weighted. No data is available for Ireland.
Source: Eurostat, 2022 (EHIS 2019).

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Mortality due to air pollution

Air pollution and climate change caused by greenhouse gas emission from human activities pose a serious threat to people's health and to future generations. Air pollution increases the risk of various health problems including respiratory diseases, lung cancer, cardiovascular diseases, and leukaemia, with children and older people being particularly vulnerable.

In EU countries, exposure to fine particulate matter (PM2.5) – a key air pollutant – is estimated to have caused the death of 307 000 people in 2019 (EEA, 2021[1]). Mortality rates from PM2.5 were highest in Central and Eastern Europe (e.g. Poland, Hungary, Romania, Bulgaria as well as Albania, Serbia and North Macedonia) with premature death rates at least 50% higher than the EU average. Conversely, rates were lowest in Ireland, Finland, Sweden as well as Norway and Iceland, with rates less than half the EU average (Figure 4.22).

While the mortality burden of air pollution remains very high in many countries, reduced emissions of PM2.5 and other key pollutants from transport and energy supply have led to improvements in air quality in Europe and fewer deaths from air pollution (EEA, 2021[1]). Premature death rates due to PM2.5 decreased by over 20% between 2009 and 2019 on average in EU countries. Premature deaths rates decreased in virtually all countries, but to various extent. Luxembourg, Belgium, France, as well as Switzerland, Norway and Iceland recorded the largest reductions (Figure 4.23).

Cross-sectoral policy actions to limit greenhouse gas emissions are essential to limit the detrimental impacts on human health and the environment. As part of the European Green Deal, the Zero Pollution Action Plan, adopted by the European Commission in 2021, aims to reduce the number of premature deaths caused by PM2.5 by at least 55% by 2030 compared with 2005 (European Commission, 2021[2]). To achieve this goal, the EU is revising the air quality standards to align them more closely with the stricter WHO recommendations. In parallel, the Commission will also introduce stricter requirements to tackle air pollution at source from different sectors, such as agriculture, industry, transport, buildings and energy, including through a number of European Green Deal measures and strategies (such as Sustainable and Smart Mobility, Renovation Wave, and Farm to Fork).

Definition and comparability

Fine particulate matter (PM) is a mixture of fine solid or liquid particles (e.g. dust, smoke, soot, pollen and soil particles) added into the air mostly by activities using fuel combustion. PM2.5 refers to suspended particulates less than 2.5 micrometres in diameter that are capable of penetrating deep into the respiratory tract. It is linked with illnesses and deaths from heart, lung, neurological or metabolic systems.

The data on premature deaths due to PM2.5 are based on estimates from the European Environment Agency (EEA, 2021[1]; González Ortiz et al., 2021[3]). Premature death is defined as death occurring before a person reaches the life expectancy for a country, stratified by sex. The data relate only to outdoor air pollution, which accounts for a much larger proportion of deaths than indoor air pollution in all EU countries.

References

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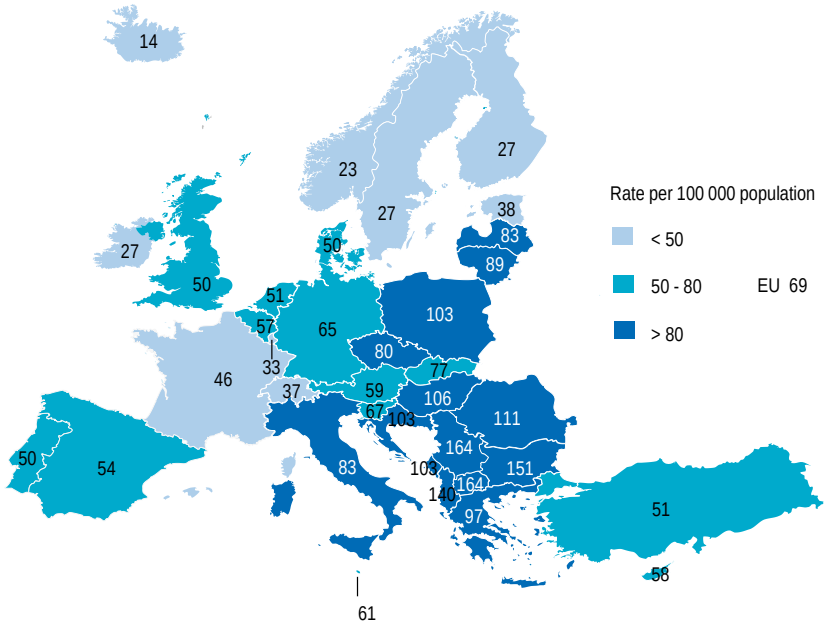
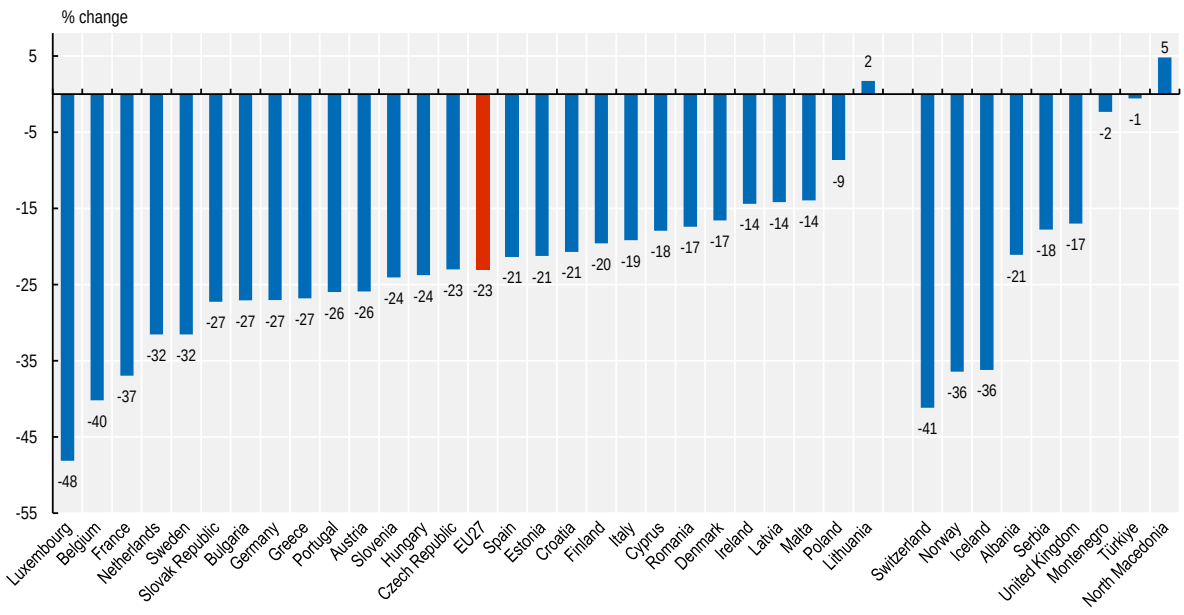
Figure 4.22. Premature deaths due to air pollution PM2.5, 2019



Note: The data for Montenegro relates to 2018.

Source: González Ortiz et al. (2021[3]), "Health risk assessments of air pollution. Estimations of the 2019 HRA, benefit analysis of reaching specific air quality standards and more", https://www.eionet.europa.eu/etcs/etc-atni/products/etc-atni-reports/etc-atni-report-10-2021-health-risk-assessments-of-air-pollution-estimations-of-the-2019-hra-benefit-analysis-of-reaching-specific-air-quality-standards-and-more, complemented with data from IHME for Türkiye.

Figure 4.23. Change in premature deaths due to air pollution (PM2.5) from 2009-19



Note: The latest data for Montenegro relates to 2018.

Source: González Ortiz et al. (2021[3]), "Health risk assessments of air pollution. Estimations of the 2019 HRA, benefit analysis of reaching specific air quality standards and more", https://www.eionet.europa.eu/etcs/etc-atni/products/etc-atni-reports/etc-atni-report-10-2021-health-risk-assessments-of-air-pollution-estimations-of-the-2019-hra-benefit-analysis-of-reaching-specific-air-quality-standards-and-more, and EEA (2020[4]), "Air quality in Europe - 2020 report", https://www.eea.europa.eu/publications/air-quality-in-europe-2020-report, complemented with data from IHME for Türkiye.

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5 Health expenditure and financing

This chapter looks at recent trends in health spending, overall and disaggregated by type of health service and provider. There is a particular focus on the impact of COVID-19 on health spending. The chapter also analyses how health care is financed across Europe and takes a closer look at how much is spent on primary care and pharmaceuticals. In 2020, the COVID-19 pandemic caused massive disruption to health systems and health spending increased significantly in most countries to address the consequences of this health crisis. Although partly attributable to the widespread deterioration in GDP from the economic fallout, spending on health as a share of GDP grew significantly to reach 10.9% in the EU in 2020, with the share climbing to over 12% in Germany and France. On a per capita basis, health spending increased by more than 5% across EU countries, the highest rate in nearly two decades. Regarding the financing of health care, government and compulsory schemes accounted for around four-fifths of overall health spending across EU countries in 2020. However, out-of-pocket expenditure – which can impact individuals' access to care – remains an important source of health financing in several Southern as well as Central and Eastern European countries.

Health expenditure per capita

Health expenditure in relation to GDP

Financing of health expenditure

Health expenditure by type of good and service

Expenditure on primary health care

Health expenditure by provider

Pharmaceutical expenditure

Health expenditure per capita

The level of health spending in a country and how this changes over time is determined by a wide range of demographic, social and economic factors, as well as the financing arrangements and organisational structure of the health system itself. The COVID-19 pandemic has shown that the extent to which a country was impacted by the crisis may also affect overall spending levels.

Given these factors, there are large variations in the level and growth of health spending across Europe. With spending at EUR 4 997 per person, Switzerland was the biggest spender in Europe, followed by Germany (EUR 4 831). Spending levels in the Netherlands, Austria and Sweden were also well above the population-weighed EU average of EUR 3 159. At the other end of the scale, Romania, Croatia and Bulgaria were the lowest spending countries in the EU, below half the EU average (Figure 5.1). This means that on a per capita basis, there is a three-fold difference in health spending between high-income countries in Western and Northern Europe and some low spending countries in Central and Eastern Europe.

After a period of low growth following the global financial crisis, annual per capita health expenditure growth (adjusted for inflation) picked up and reached 3% on average across EU member states between 2013 and 2019 (Figure 5.2). This ranged from very moderate growth rates of less than 1% in Finland, Greece, Luxembourg, France, and the Netherlands to substantial annual increases in health spending per capita of more than 5% in Estonia, Lithuania, Latvia and Romania.

The onset of the COVID-19 pandemic in early 2020 caused massive disruption to health systems. Expenditure associated with non-COVID-19-related care dropped due to fewer hospitalisations and elective surgeries (for example see indicator “Volume of hip and knee replacements” in Chapter 7). On the other hand, the crisis required countries to rapidly deploy new resources across the health sector – for example, building up testing and diagnostic capabilities, and providing increased capacity for treatment of patients in the hospital sector. In some countries, health providers received substantial subsidies in exchange for reserving treatment capacity for COVID-19 patients. As a result, upward pressures on health spending in 2020 can be observed in nearly all EU member countries. In 2020, per capita health expenditure increased by 5.5% across EU countries compared to 2019, the highest rate since 2004. Among EU member states, health spending per capita increased by around 10% in Estonia, Ireland and Hungary, while it grew by more than 15% in the Czech Republic and almost 20% in Bulgaria. Only Belgium, Poland, and the Slovak Republic show a divergent trend, with health spending per capita in 2020 decreasing compared to 2019 levels.

Definition and comparability

Expenditure on health, as defined in the System of Health Accounts (OECD/Eurostat/WHO, 2017[1]), measures the final consumption of health goods and services. This refers to current spending on medical services and goods, public health and prevention programmes, and overall administration of health care provision and financing irrespective of the type of financing arrangement. Subsidies paid to providers as part of targeted programmes to support the health sector should also be included in the figures.

Countries’ health expenditures are converted into a common currency (Euro) and are adjusted to take account of the different purchasing power of the national currencies. Economy-wide Actual Individual Consumption (AIC) PPPs are used to compare relative expenditure on health in relation to the rest of the economy.

For the calculation of growth rates in real terms, economy-wide AIC deflators are used. Although some countries produce their own health-specific deflators, these are not currently used due to the limited availability and comparability for all countries.

References

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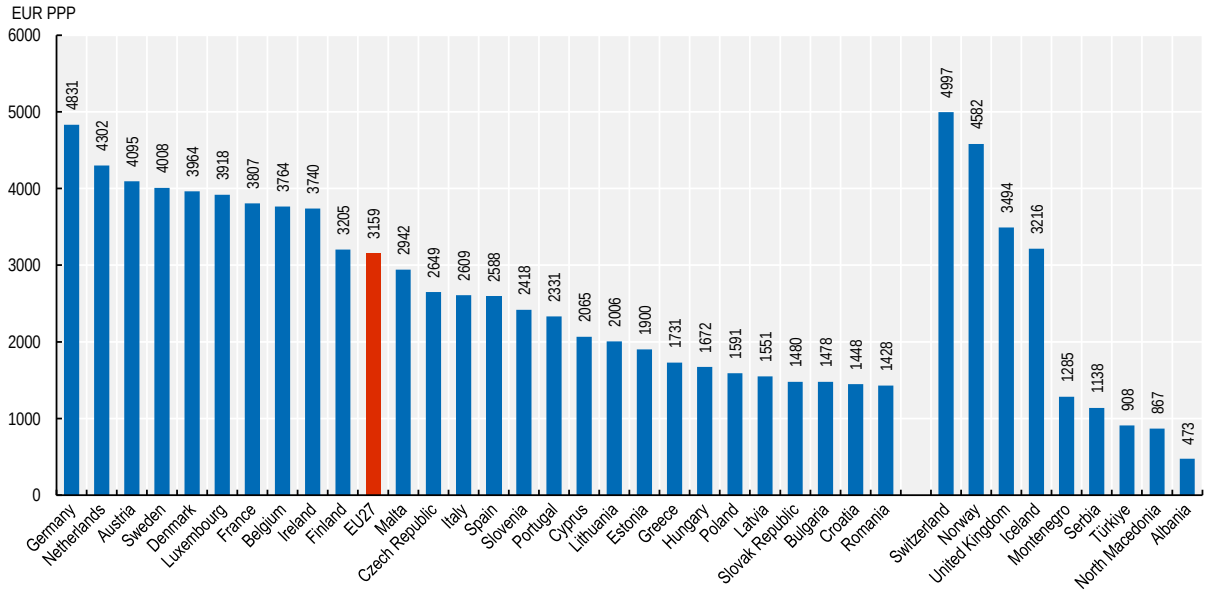
Figure 5.1. Health expenditure per capita, 2020 (or nearest year)



Note: The EU average is weighted.
Source: OECD Health Statistics 2022; Eurostat Database; WHO Global Health Expenditure Database.

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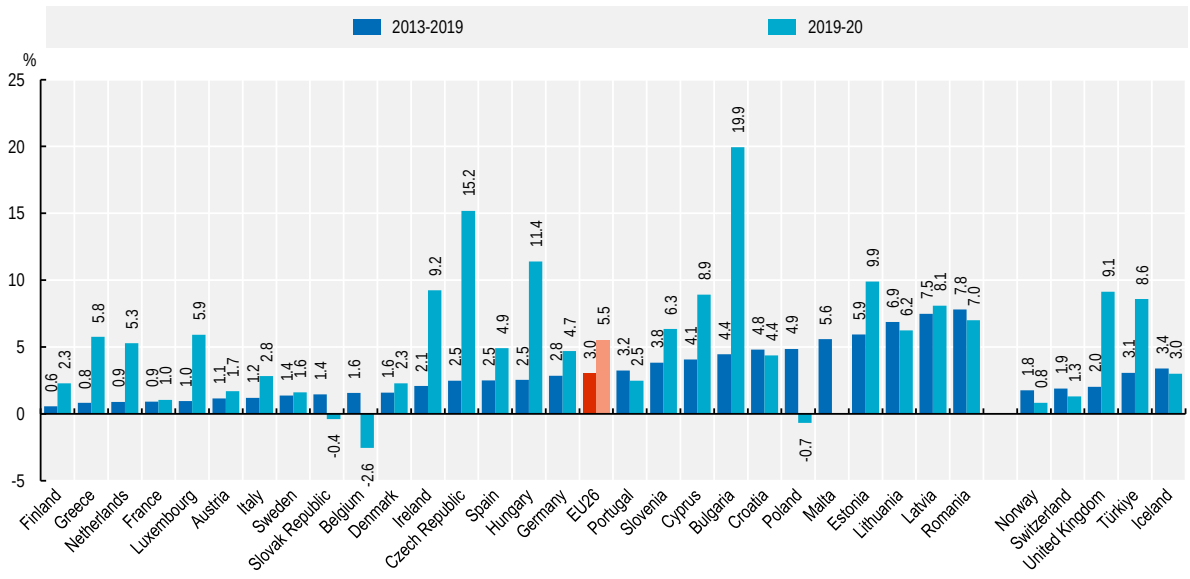
Figure 5.2. Annual average growth rate (real terms) in per capita health spending, 2013-20 (or nearest year)



Note: The EU average is unweighted. If necessary, growth rates and time periods have been adjusted by the OECD Secretariat to take account of breaks in series.
Source: OECD Health Statistics 2022; Eurostat Database; WHO Global Health Expenditure Database.

StatLink https://stat.link/1j325k

Health expenditure in relation to GDP

How much a country spends on health care in relation to all other goods and services in the economy, and how that changes over time, depends not only on the level of health spending but also on the size of the economy. During the 1990s and early 2000s, EU countries generally saw health spending outpace the rest of the economy, leading to an almost continual rise in the ratio of health expenditure to gross domestic product (GDP), but this trend was disrupted with the financial and economic crisis of 2008/09. The COVID-19 pandemic also led to fundamentally diverging growth patterns of health spending and economic output resulting in a major adjustment of this indicator.

In 2020, an unprecedented 10.9% of the GDP of the European Union was devoted to health care (Figure 5.3). Germany and France dedicated the highest shares to health at over 12% of their respective GDP. Sweden, Austria, the Netherlands and Belgium also spent over 11% of their GDP on health. The lowest shares of the overall economic output allocated to health were in Luxembourg (5.8%), Romania (6.3%), Poland (6.5%) and Ireland (7.1%). Across the whole of Europe, the United Kingdom and Switzerland were additional high spenders on health (with shares at around 12%), while Türkiye allocated the lowest share (4.6%).

Between 2013 and 2019, health expenditure per capita growth was broadly in line with GDP per capita growth in EU member countries (Figure 5.4). Following years of austerity and slow growth caused by the global financial crisis of 2008/09, health expenditure and GDP both grew between 2013 and 2019 at around the same rate, with both averaging an annual 2.5% growth in real terms. Consequently, health expenditure as a share of GDP remained relatively stable over the same period in many countries (Figure 5.5), at around 10% across the European Union.

However, the COVID-19 crisis had significant consequences for both economic and health spending growth in 2020. The pandemic saw a new array of direct and indirect costs for the health sector, associated with the treatment and management of COVID-19 patients and the scaling up of treatment capacity. At the same time, lockdown measures and restrictions on economic activity caused GDP to plummet across nearly all EU countries. Between 2019 and 2020, average health expenditure per capita grew by 5.5% across EU member countries, while GDP per capita fell rapidly by nearly 5% on average over the same period. As a result, health expenditure as a share of GDP increased substantially by 1 percentage point to 10.9% in 2020 across the European Union.

Preliminary estimates for 2021 point to further volatility in the evolution of health expenditure and GDP. Further increases in health expenditure can be observed for a handful of EU member countries for 2021 as countries face continuing pandemic-associated costs. These include the financing of vaccination programmes, testing and surveillance, and increased demand for health services. On the other hand, subsidies to health providers are expected to be much more limited in 2021 compared to the previous year. Further uncertainties beyond 2021 lie ahead, as EU member countries experience growing economic challenges in light of the war in Ukraine, high inflation and disruptions in supply chains.

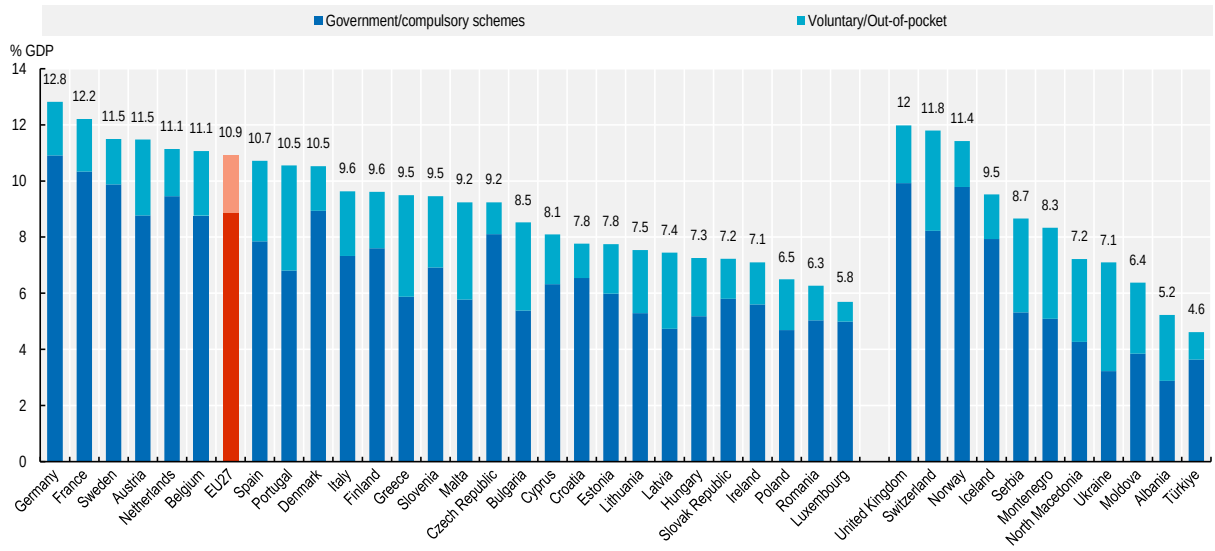
Definition and comparability

Gross domestic product (GDP) is the sum of final consumption, gross capital formation and net exports. Final consumption includes all the goods and services used by households or the community to satisfy their needs. It includes final consumption expenditure of households, general government and non-profit institutions serving households.

The GDP figures used to calculate the indicator health expenditure to GDP are based on official GDP data available as of mid-June 2022.

In countries such as Ireland and Luxembourg, where a significant proportion of GDP refers to profits exported and not available for national consumption, gross national income (GNI) may be a more meaningful measure than GDP, but for international comparability, GDP is used throughout.

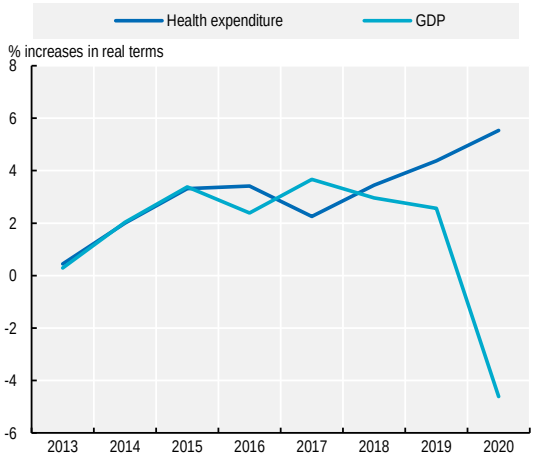
Figure 5.3. Health expenditure as a share of GDP, 2020 (or nearest year)



Note: The EU average is weighted.
Source: OECD Health Statistics 2022; Eurostat Database; WHO Global Health Expenditure Database.

StatLink https://stat.link/ghc7r5

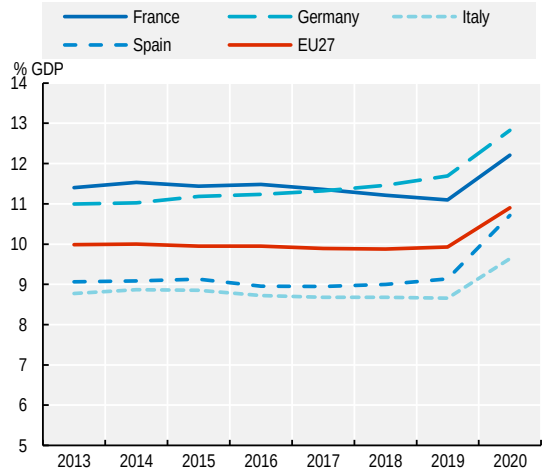
Figure 5.4. Annual growth in per capita health expenditure and GDP, EU27, 2013-20



Note: The EU average is unweighted.
Source: OECD Health Statistics 2022; Eurostat Database.

StatLink https://stat.link/n39ugk

Figure 5.5. Health expenditure as a share of GDP, EU27 and selected countries, 2013-20



Note: The EU average is weighted.
Source: OECD Health Statistics 2020; Eurostat Database.

StatLink https://stat.link/zykoie

Financing of health expenditure

Health care is purchased through a variety of financing arrangements. In countries where individuals are entitled to health care services based, for example, on their residency, government schemes are the predominant arrangement. In others, some form of compulsory health insurance (either social health insurance or one organised through private insurers) usually covers the bulk of health expenditure. In addition, out-of-pocket payments by households as well as various forms of voluntary health insurance intended to replace, complement or supplement automatic or compulsory coverage make up the rest of health spending.

In 2020, 81% of total health spending in the EU was financed through governments and compulsory insurance (Figure 5.6). In Sweden and Denmark, government schemes covered around 85% of all health spending. In Luxembourg, Croatia, Germany, France, the Slovak Republic and the Netherlands, compulsory health insurance financed more than three-quarters of all health expenditure.

The share of health spending financed through households' out-of-pocket payments was 15% across EU countries. In three EU countries – Bulgaria, Greece and Malta – households' out-of-pocket payments accounted for at least one-third of all health spending in 2020. Only in Slovenia did voluntary health insurance finance more than 10% of health spending, compared to the EU weighted average of 3%.

Collectively, the health crisis caused a rise in the share of health spending financed through government and compulsory insurance, with significant additional public spending made available to increase health system capacity. Meanwhile, spending through households' out-of-pocket payments and voluntary insurance generally decreased as a result of postponement and reduced demand for elective health care services and hesitancy of patients to seek care out of fear of infection.

To purchase health care goods and services, financing schemes rely on different types of revenues. In 2020, public sources (which includes government transfers and social insurance contributions) funded 77% of all health spending on average across EU countries (Figure 5.7). While this share is comparable to that seen in Figure 5.6, there are differences for some countries. For example, compulsory private health insurance is generally financed from private revenues, which explains why the share of publicly-sourced health spending in Germany, France and Switzerland is substantially lower than their respective share of health spending financed from government and compulsory schemes.

Public budgets finance many different services and health care is competing for funds with other sectors such as education, defence and housing. The COVID-19 pandemic caused major upward pressure on health budgets during 2020 but similar pressures were felt across many other public spending priorities, with governments providing substantial support to firms and households. As a result, the share of total government expenditure allocated to health remained at 14% on average across EU countries (Figure 5.8) compared to 2019. In Ireland and Germany, the share of public spending dedicated to health care was around 20%, while in Hungary, Greece and Poland, it was around 10%. Since 2015, these shares have risen in most EU countries, but the increases have been mainly moderate.

Definition and comparability

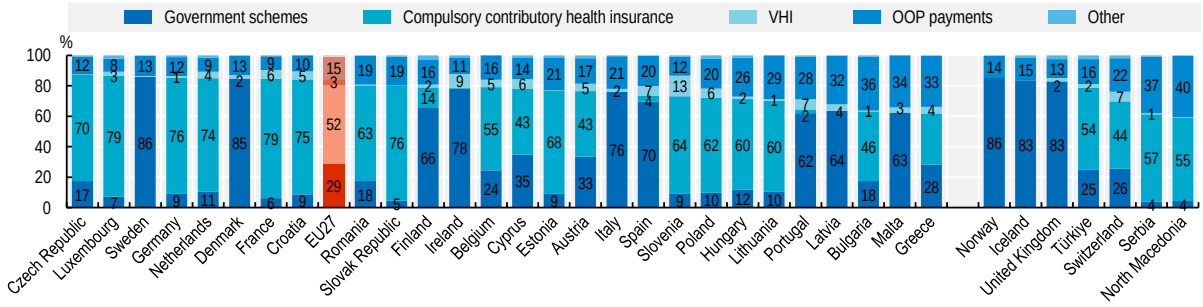
The financing of health care can be analysed from the point of view of financing schemes (financing arrangements through which health services are paid for and obtained by people, e.g. social health insurance) and types of revenues of financing schemes (e.g. social insurance contributions) (OECD/Eurostat/WHO, 2017[1]).

Total government expenditure is as defined in the System of National Accounts and includes as major components: intermediate consumption, compensation of employees, interest, social benefits, social transfers in kind, subsidies, other current expenditure and capital expenditure payable by central, regional and local governments as well as social security funds.

References

OECD/Eurostat/WHO (2017), *A System of Health Accounts 2011: Revised edition*, OECD Publishing, Paris, https://doi.org/10.1787/9789264270985-en. [1]

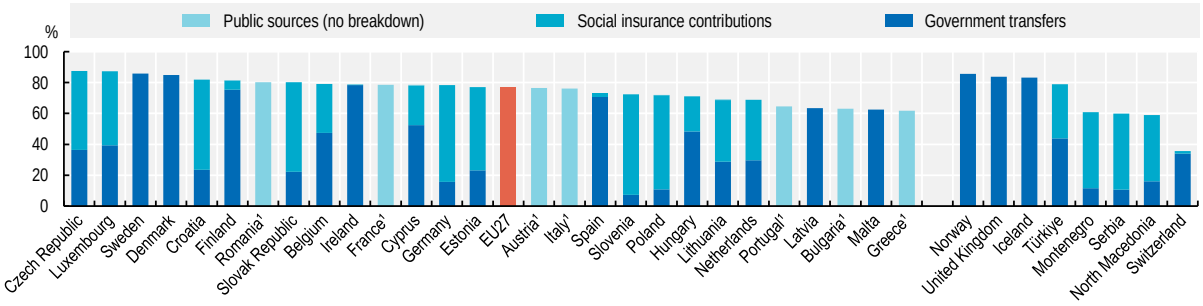
Figure 5.6. Health expenditure by type of financing, 2020 (or nearest year)



Note: Countries are ranked by government schemes and compulsory health insurance as a share of health expenditure. The EU average is weighted. The "Other" category refers to charities, employers, foreign and undefined schemes. OOP refers to out-of-pocket payments.
Source: OECD Health Statistics 2022; Eurostat Database; WHO Global Health Expenditure Database.

StatLink https://stat.link/xszdnl

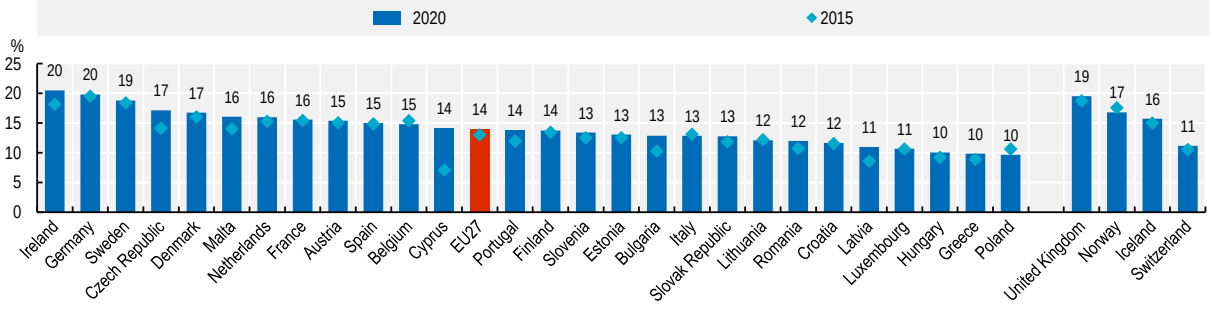
Figure 5.7. Health expenditure from public sources as share of total health spending, 2020 (or nearest year)



Note: The EU average is weighted. 1. Public sources include spending by government schemes and social health insurance schemes.
Source: OECD Health Statistics 2022; WHO Global Health Expenditure Database.

StatLink https://stat.link/rw39pj

Figure 5.8. Health expenditure from public sources as a share of total government expenditure, 2015 and 2020 (or nearest year)



Note: For those countries without information on sources of revenues, data from financing schemes are used. The EU average is unweighted.
Source: OECD Health Statistics 2022; OECD National Accounts Database; Eurostat database.

StatLink https://stat.link/e3y7k6

Health expenditure by type of good and service

A variety of factors, from disease burden and system priorities to organisational aspects and costs, help determine the allocation of resources across the various types of health care goods and services. In 2020, the EU spent around three-fifths of its total health spending on curative and rehabilitative care, around 20% on retail medical goods, and one-sixth on health-related long-term care. The remaining 7% was spent on collective services, such as prevention and public health, as well as the administration of health care systems (Figure 5.9).

In 2020, the share of current health expenditure going to curative and rehabilitative care ranged from just over half of all health spending in Malta and the Netherlands to around three-quarters in Cyprus and Portugal. Breaking it down further, Romania had the highest proportion of spending on inpatient care (including day care in hospitals), accounting for 46% of health spending. For most EU countries (16), spending on outpatient care (including home-based curative and rehabilitative care and ancillary services) exceeded that on inpatient care.

The other major category of health spending is retail medical goods (mainly pharmaceuticals) consumed in outpatient settings. In 2020, the share of medical goods spending was highest in Bulgaria, the Slovak Republic and Greece, where it represented around a third of health spending. In contrast, Denmark, Sweden and the Netherlands spent only 10-11% of total health spending on medical goods.

Countries' spending on health-related long-term care also varies considerably across the EU. The Netherlands, Sweden and Norway allocated more than a quarter of their health spending to long-term care in 2020. In many Southern as well as Central and Eastern European countries, with more informal arrangements, expenditure on formal long-term care services accounts for a much smaller share of total spending.

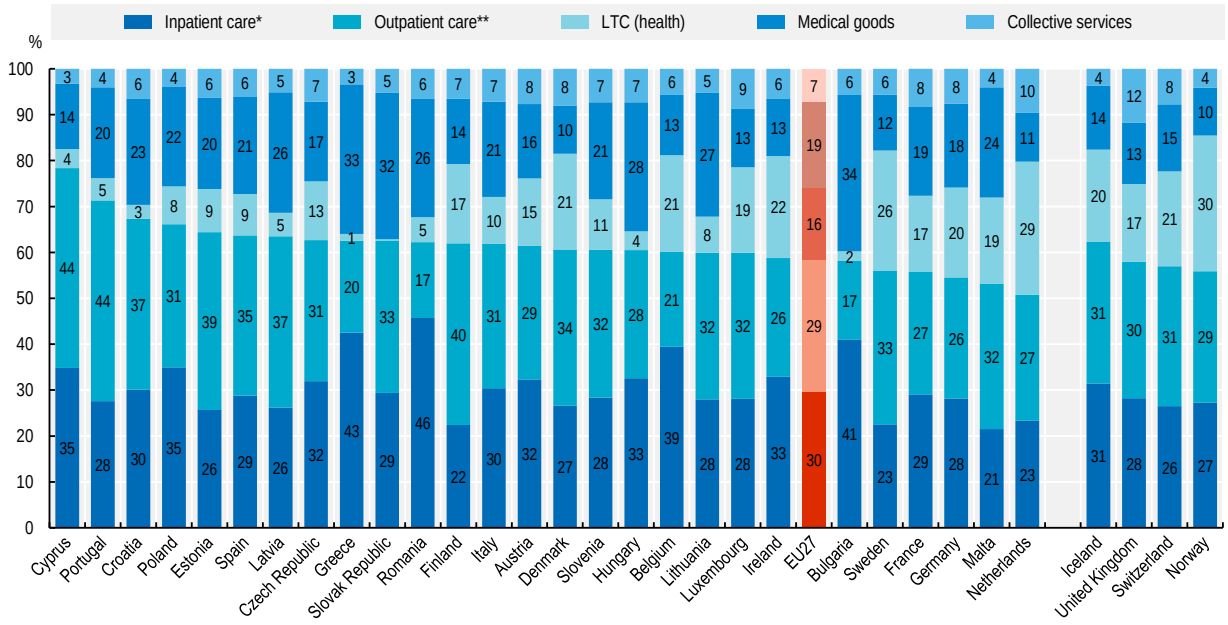
Figure 5.10 compares the per capita spending growth rates for key health goods and services for the years 2013-19 with 2019-20 across the EU. Prior to the COVID-19 crisis, spending growth for inpatient care, pharmaceuticals, and administration averaged around 2-3% per year, while annual spending increases for long-term care, outpatient care, and prevention averaged above 4%. In 2020, the pandemic triggered exceptional spending growth for most health care functions. Spending on preventive care increased by nearly one-third, with countries dedicating resources to testing, tracing, surveillance, and public information campaigns related to the pandemic. Spending growth on inpatient care reached nearly 9%, driven by COVID-19-related expenditures including additional staff and input costs (e.g. personal protective equipment) and substantial subsidies targeted at hospitals. Only outpatient care experienced lower growth in 2020 compared to the 2013-19 period. This can be attributed to the deferral of visits to outpatient facilities during the pandemic, in efforts to reduce transmission and free up health system capacity.

Definition and comparability

The *System of Health Accounts* defines the boundaries of the health care system. Current health expenditure comprises personal health care (curative and rehabilitative care, long-term care, ancillary services and medical goods) and collective services (prevention and public health services as well as health administration). Curative, rehabilitative and long-term care can also be classified by mode of provision (inpatient, day care, outpatient and home care). Concerning long-term care, only care that relates to the management of the deterioration in a person's health is reported as health expenditure, although it is difficult in certain countries to clearly separate out the health and social aspects of long-term care.

Some countries can have difficulties separating spending on pharmaceuticals used as an integral part of hospital care from those intended for use outside of the hospital, potentially leading to an underestimate of pharmaceutical spending and an overestimate of inpatient and/or outpatient care.

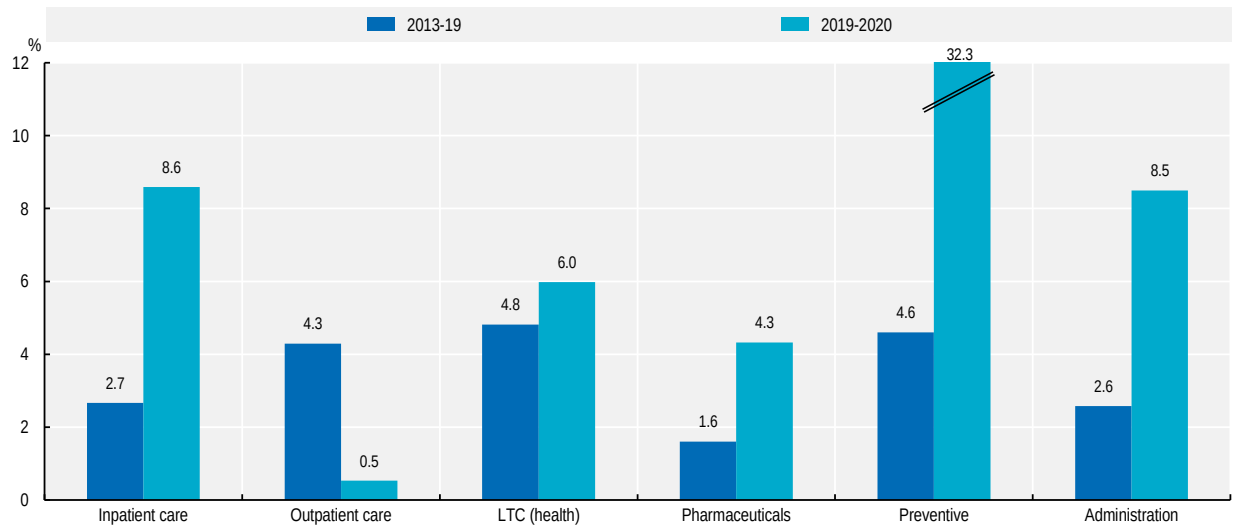
Figure 5.9. Health expenditure by function, 2020 (or nearest year)



Note: Countries are ranked by curative-rehabilitative care as a share of health expenditure. The EU average is weighted. *Refers to curative-rehabilitative care in inpatient and day care settings. **Includes home care and ancillary services and can be provided in ambulatory care settings or hospitals.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/a9toqv

Figure 5.10. Growth rates of health expenditure per capita for selected functions, EU average, in real terms, 2013-20



Note: The EU average is unweighted. Pharmaceuticals include other medical non-durables (e.g. medical face masks).
Source: OECD Health Statistics 2022.

StatLink https://stat.link/wr6d7s

Expenditure on primary health care

Effective primary health care is the cornerstone for efficient, people-centred, and equitable health systems. The COVID-19 pandemic has shown that for health systems to be resilient in the face of health crises, strong primary and community health care – the frontline of all health systems – is essential.

In 2020, primary health care accounted for around 13% of all health spending on average across EU countries, ranging from 8% in Romania to around 18% in Lithuania (Figure 5.11). In most EU countries, primary health care spending as a share of total health spending remained relatively constant between 2015 and 2019 suggesting expenditure growth was in line with overall health spending. Yet, there was a slight drop in this proportion in 2020 as a result of strong growth in spending on inpatient care and a widespread reduction in dental care spending.

Analysing the composition of primary care spending reveals that around half of it refers to general outpatient care services on average across EU countries. A further 36% is related to dental care. Prevention services (9%) make up most of the remaining part. Looking at specific country examples, the share of general outpatient care in ambulatory settings is particularly high in Poland and Cyprus, reaching 13% of all health spending. In Germany, Austria, Romania and Luxembourg, spending on general outpatient care is much lower in relative terms, accounting for less than 5% of total health spending (Figure 5.11).

While only accounting for a moderate share of overall health spending, spending on prevention and public health increased significantly in some EU countries with the onset of the COVID-19 crisis (see indicator "Health expenditure by type of good and service"). Yet, even after the strong one-off growth in 2020 – mainly related to COVID-19 public health management, extensive testing to detect the virus, pandemic surveillance and emergency co-ordination, spending on preventive measure still only accounts for around 3% of overall health spending (Figure 5.12). While there is some variation in this proportion across EU countries – ranging from more than 5% in Italy, Finland and Luxembourg to around 1% in the Slovak Republic – it is generally perceived to be insufficient. An important lesson of the COVID-19 pandemic is that the health status of populations needs to be improved to make people more resilient against future health system emergencies. Cross-country analysis has shown that countries where the population was less obese and less likely to smoke generally had better health outcomes during the pandemic (OECD, forthcoming[1]).

Definition and comparability

The OECD has developed a methodological framework based on the System of Health Accounts to estimate primary health care spending on which the results presented here are based (Mueller and Morgan, 2018[2]).

The following functions are identified as basic care services: (i) General outpatient curative care (e.g. routine visits to a GP or nurse for acute or chronic treatment); (ii) Dental outpatient curative care (e.g. regular control visits as well as more complex oral treatment); (iii) Home-based curative care (mainly referring to home visits by GPs or nurses); (iv) Preventive care services (e.g. immunisation or health check-ups).

Where basic care services are provided by ambulatory health care providers such as medical practitioners, dentists, ambulatory health care centres and home health care service providers, this may be considered a proxy for primary health care. Yet primary health care is a complex concept and no definitive consensus exists on which services or providers should be included.

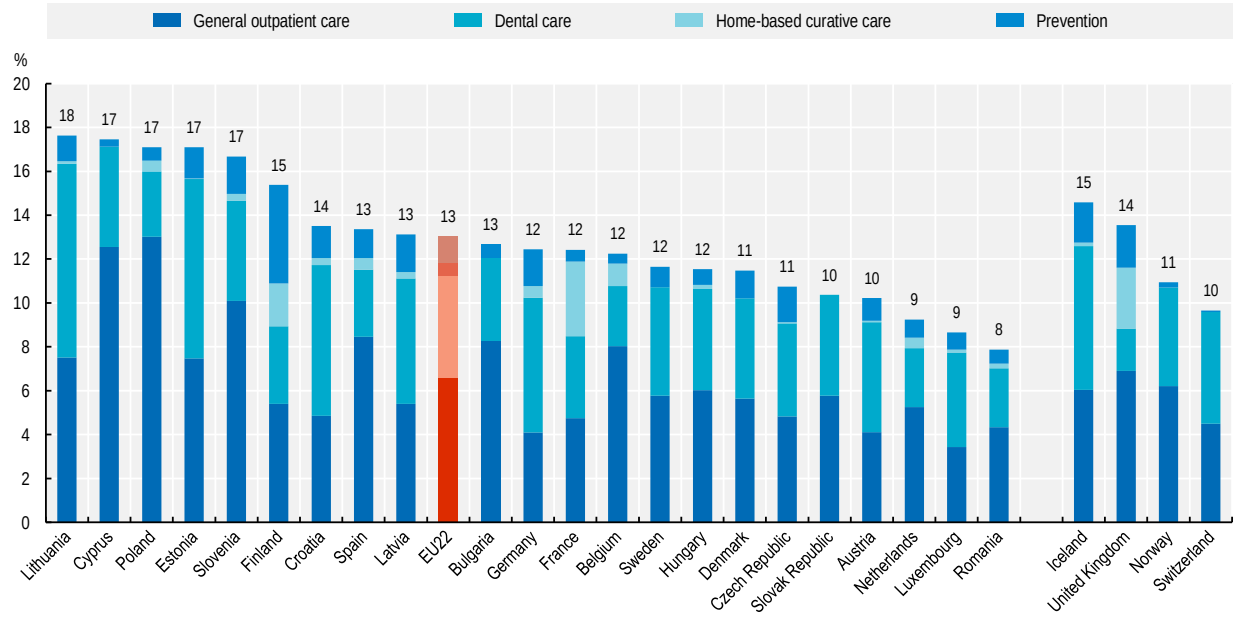
Comparability for this indicator is still limited and depends on countries' capacity and methods used to distinguish between general outpatient and specialist services.

References

Mueller, M. and D. Morgan (2018), "Deriving preliminary estimates of primary care spending under the SHA 2011 framework", OECD, Paris, https://www.oecd.org/health/health-systems/Preliminary-Estimates-of-Primary-Care-Spending-under-SHA-2011-Framework.pdf. [2]

OECD (forthcoming), *Ready for the Next Crisis? Investing in Resilient Health Systems*, OECD Health Policy Studies, OECD Publishing, Paris. [1]

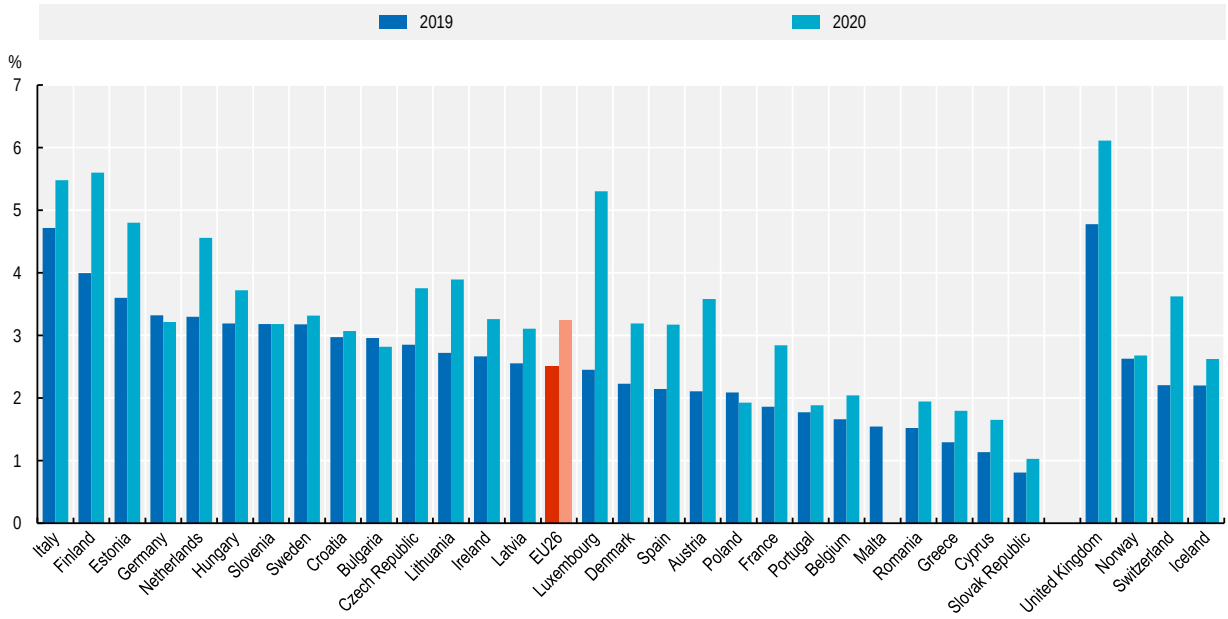
Figure 5.11. Spending on primary health care services as share of current health expenditure, 2020



Note: The EU average is unweighted.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/dk6iu1

Figure 5.12. Share of spending on prevention in current health expenditure, 2019-20



Note: The EU average is unweighted.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/drk3lz

Health expenditure by provider

How and where health care is delivered can have a significant impact on spending for different goods and services. Health care can be provided in many different organisational settings, ranging from hospitals and medical practices to pharmacies and even private households caring for family members. Analysing health spending by provider can be particularly useful when considered alongside the functional breakdown of health expenditure, giving a fuller picture of the organisation of health systems (see indicator "Health expenditure by type of good and service").

Activities delivered in hospitals account for the largest proportion of health care expenditure in almost all EU countries. In 2020, hospitals received 38% of EU spending on health. In Romania, Croatia, Spain, Denmark, and Cyprus, hospitals received more than 45% of their countries' entire health care budget (Figure 5.13). On the other end of the scale, hospitals account for less than 30% of Germany's total health spending.

After hospitals, the second-largest category of care providers are ambulatory providers. Across EU countries, care delivered by this category accounts for a quarter of health spending. The share stands at 30% or above in Germany and Finland, but is less than 15% in Romania and Bulgaria. This category covers a wide range of facilities and, depending on the country-specific organisation of health service delivery, most spending relates either to medical practices including offices of GPs and specialists or ambulatory health care centres.

Other main provider categories include retailers (mainly pharmacies selling prescription and over-the-counter medicines) – accounting for 17% of health spending on average across EU countries – and residential long-term care facilities (mainly providing inpatient care to long-term care dependent people), making up 10% of health spending on average.

There is a large diversity in the range of activities that may be performed by the same category of provider across countries, depending on the organisation of each health system. This variation is most pronounced in hospitals (Figure 5.4). Although the majority of hospital expenditure in almost all EU countries is allocated to inpatient (curative-rehabilitative) care, in some countries, hospitals constitute an important provider of outpatient care services – for example, through accident and emergency departments or specialist outpatient units. In Germany, Greece and Bulgaria, hospitals are generally mono-functional, with the vast majority (>90%) of spending directed to *inpatient care*, and very little spending on outpatient and day care. On the other hand, *outpatient care* accounts for over 40% of hospital expenditure in Portugal, Finland, Denmark, and Sweden.

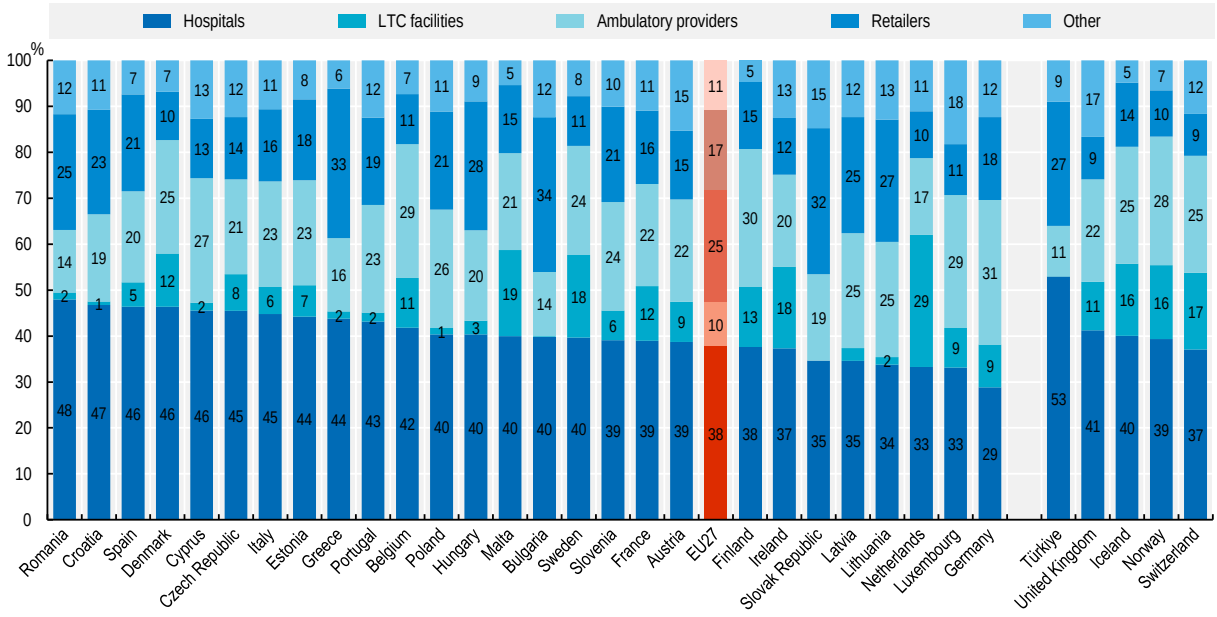
As many countries allocated additional resources to hospitals to cope with severe cases of COVID-19 and to be better prepared for future increases in demand, the total share of hospital expenditure in overall health spending increased slightly in 2020 by half a percentage point compared to 2019. The pandemic also had consequences for the composition of service delivery in hospitals. As elective day surgeries were frequently postponed during 2020, inpatient expenditure as a share of hospital expenditure increased by 1 percentage point, while day curative care fell by around half a percentage point.

Definition and comparability

The different categories of health care providers are defined in the System of Health Accounts.

The main categories of health care providers are hospitals (acute and psychiatric), residential long-term care facilities, ambulatory providers (practices of GPs and specialists, dental practices, ambulatory health care centres, providers of home health care services), providers of ancillary services (e.g. ambulance services, laboratories), retailers (establishments whose primary activity is the retail sale of medical goods, e.g. pharmacies), and providers of preventive care (e.g. public health institutes).

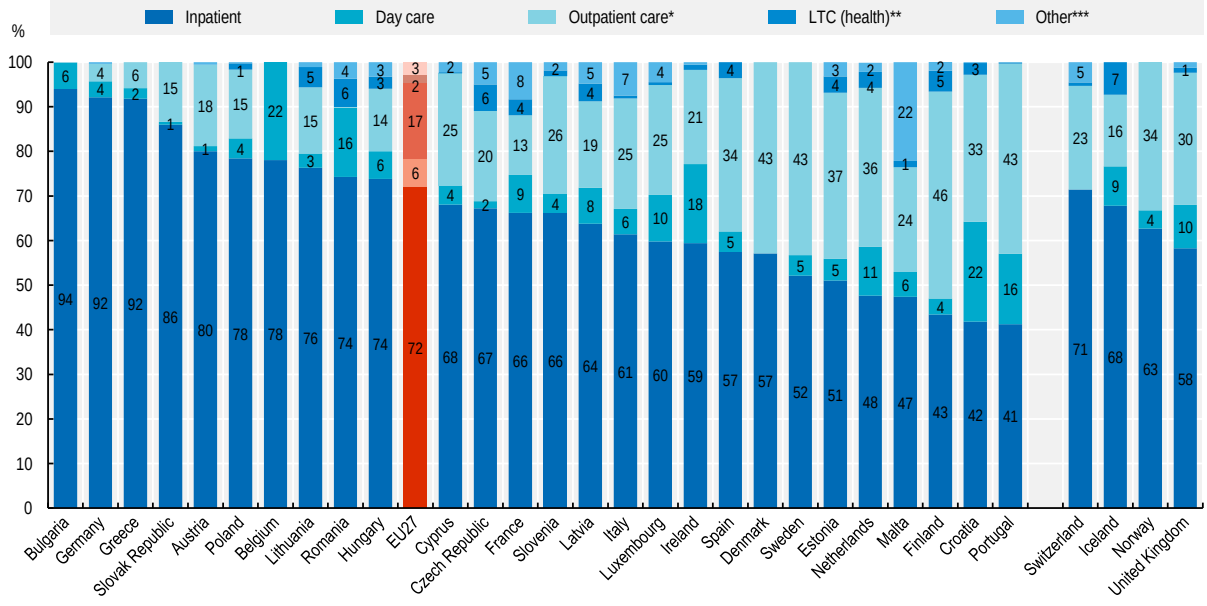
Figure 5.13. Health expenditure by provider, 2020 (or nearest year)



Note: The EU average is weighted.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/wix7fd

Figure 5.14. Hospital expenditure by type of service, 2020 (or nearest year)



Note: The EU average is weighted. *Refers to curative-rehabilitative care provided to outpatients or at their homes and ancillary services. **Refers to LTC services for people with LTC needs. ***Includes medical goods and collective health services.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/1wl9jm

Pharmaceutical expenditure

Pharmaceutical care is constantly evolving, with an increasing number of novel medicines entering the market every year. These may offer alternatives to existing treatments, and in some cases, the prospect of treating conditions previously considered incurable. However, the costs of new pharmaceutical drugs can be very high, with significant implications for health care budgets.

Spending on retail pharmaceuticals (including other medical non-durables) averaged EUR 462 per person across the EU in 2020 (Figure 5.15). With EUR 660 per capita, Germany spent by far the most on pharmaceuticals among EU member states – over 40% above the EU average. At the other end of the scale, Denmark and Cyprus had relatively low spending levels, more than 40% below the EU average.

Around three out of every four euros spent on retail pharmaceuticals (including other medical non-durables) goes on prescription medicines, with most of the rest on over-the-counter medicines (OTC). OTC medicines are pharmaceuticals that are generally bought without prescription, and in most cases, their cost is fully borne by patients. The share of OTC medicines is particularly high in Poland, accounting for more than half of retail pharmaceutical spending, and stands at 30% or more in Romania, Latvia, and the United Kingdom.

In most countries, the costs of pharmaceuticals (including other medical non-durables) are predominantly covered by government or compulsory insurance schemes (Figure 5.16). On average across EU countries, these schemes cover 70% of all retail pharmaceutical spending, with out-of-pocket payments (29%) and voluntary private insurance (1%) financing the remainder. Public coverage is most generous in Cyprus, Germany, France and Ireland, where government and compulsory insurance schemes pay for more than 80% of all pharmaceutical costs. By contrast, in eight EU member states, public or mandatory schemes cover less than half the amount spent on medicines.

Between 2013 and 2019, spending on retail pharmaceuticals (including other medical non-durables) grew at a slower rate than other health care functions (see indicator “Health expenditure by type of good and service”). However, retail pharmaceuticals tell only part of the story since pharmaceuticals used during hospital care or in other health care settings can typically add another 20% to a country’s pharmaceutical bill (Morgan and Xiang, 2022[1]). Available data for a number of European countries suggest that total pharmaceutical spending growth has frequently outpaced that of retail pharmaceuticals between 2013 and 2019; a trend that is likely to have continued even in 2020 (Figure 5.17).

Definition and comparability

Retail pharmaceutical expenditure covers spending on prescription and over-the-counter medicines. Other medical non-durable goods include goods such as first aid kits or medical face masks.

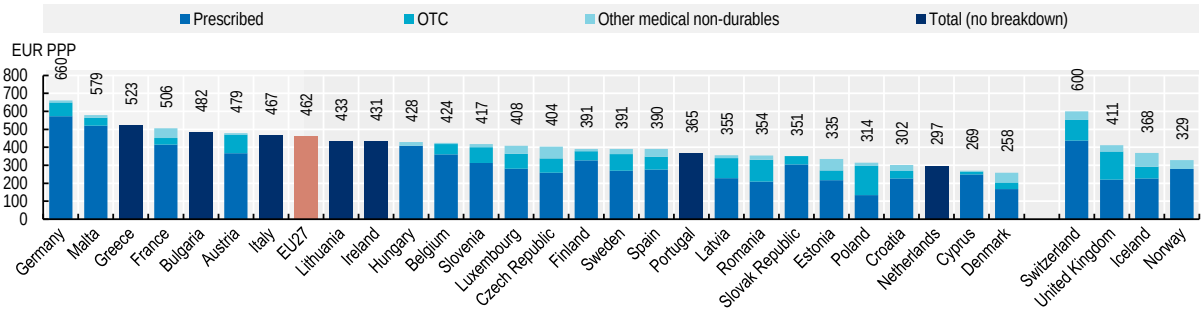
Retail pharmaceuticals are provided outside hospital care, such as those dispensed through a pharmacy or bought from a supermarket. Expenditure on retail pharmaceuticals includes wholesale and retail margins and value-added tax and should refer to “net” spending – i.e. adjusted for possible rebates payable by manufacturers, wholesalers or pharmacies.

Comparability issues exist regarding the administration and dispensing of pharmaceuticals for outpatients in hospitals. In some countries, the costs are included under curative care; in others, under pharmaceuticals. Pharmaceuticals consumed in hospitals and other health care settings as part of an inpatient or day-case treatment are excluded from retail pharmaceutical spending but are included in the aggregate of total pharmaceutical spending.

References

Morgan, D. and F. Xiang (2022), “Improving data on pharmaceutical expenditure in hospitals and other health care settings”, *OECD Health Working Papers*, No. 139, OECD Publishing, Paris, https://doi.org/10.1787/6c0d64a2-en. [1]

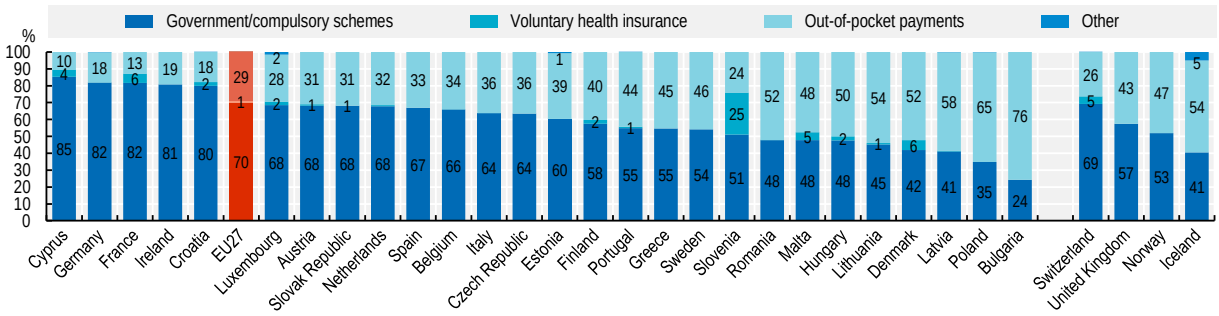
Figure 5.15. Expenditure on retail pharmaceuticals* per capita, 2020 (or nearest year)



Note: The EU average is weighted. *Including other medical non-durables.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/ks8hu0

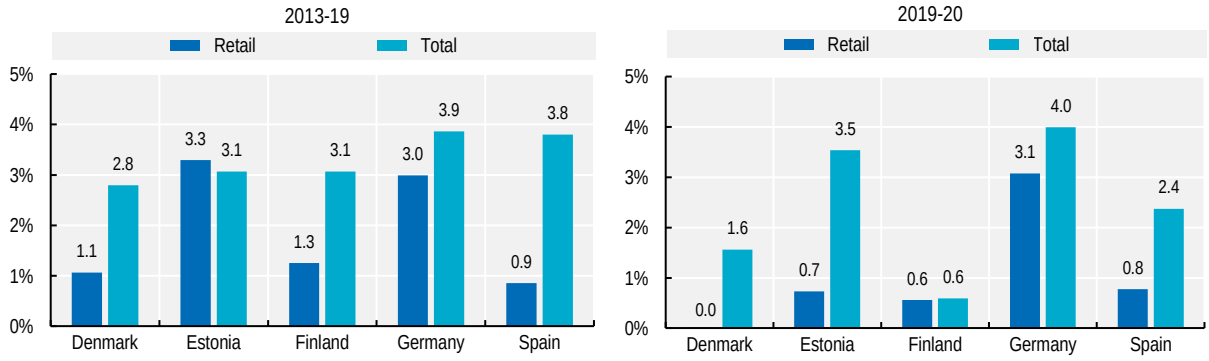
Figure 5.16. Expenditure on retail pharmaceuticals* by type of financing, 2020 (or nearest year)



Note: The EU average is weighted. *Including other medical non-durables. The category 'Other' includes non-profit-schemes, enterprises and rest of the world.
Source: OECD Health Statistics 2022; Eurostat Database.

StatLink https://stat.link/m8p32a

Figure 5.17. Annual average growth in retail and total pharmaceutical expenditure, in real terms, 2013-20 (or nearest year)



Note: If necessary, growth rates and time periods have been adjusted by the OECD Secretariat to take account of breaks in series.
Source: OECD Health Statistics 2022.

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6 Effectiveness: Quality of care and patient experience

This chapter starts with a broad indicator of avoidable mortality, providing a general assessment of the effectiveness of public health and health care systems in reducing premature deaths. In the year preceding the COVID-19 pandemic, it was estimated that better prevention and health care interventions could have prevented over 1 million premature deaths across the EU. This is almost as much as the number of deaths registered from COVID-19 during the first two and a half years of the pandemic. One of the positive consequences of the pandemic has been the increase in vaccination uptake against seasonal influenza among older people and other vulnerable groups, although most countries have room for further improvement. Before the pandemic, many EU countries had achieved strides in cancer care by implementing population-based screening programmes to detect cancer earlier and providing effective and timely cancer care, which increased survival rates. However, several countries experienced setbacks and delays in cancer screening during the pandemic, resulting in people being diagnosed at a more advanced stage. Ensuring patient safety in hospitals has taken heightened importance. High rates of patient-reported experience of safety incidents and low levels of patient safety culture indicate room for improvement as countries develop more resilient and safe health systems.

Avoidable mortality (preventable and treatable)

Routine vaccinations

Patient-reported experience

Avoidable hospital admissions

Integrated care

Mortality following acute myocardial infarction (AMI)

Mortality following stroke

Hip and knee surgery

Breast cancer screening and outcomes

Cervical and colorectal cancer screening

Safe prescribing

Safe acute care – workplace culture and patient experiences

Avoidable mortality (preventable and treatable)

Indicators of avoidable mortality can provide a starting point to assess the effectiveness of public health and health care systems in reducing premature deaths from various diseases and injuries. However, further analysis is required to assess more precisely different causes of potentially avoidable deaths and interventions to reduce them.

In 2019, over 1 million premature deaths across EU countries could have been avoided through better prevention and health care interventions. This amounts to about two-thirds of deaths under age 75. Of these deaths, most (644 000 or 64% of the total) were considered preventable through effective primary prevention and other public health measures, while slightly more than one-third (371 000 or 36%) were considered treatable through more effective and timely health care interventions.

Lung cancer, ischaemic heart diseases (of which half are deemed to be preventable), alcohol-related deaths and transport and other accidents accounted for more than half of preventable mortality in the EU (Figure 6.1). Other major causes included chronic obstructive pulmonary diseases (COPD) often related to smoking, stroke (of which half are deemed to be preventable) and suicide.

The main treatable causes of mortality include ischaemic heart disease (of which half are deemed to be treatable), colorectal cancer, breast cancer and stroke (of which half are considered to be treatable). Together, these accounted for nearly 60% of all deaths that could be avoided through the provision of timely and effective treatment.

Preventable mortality rates in 2019 were about three times lower in Cyprus, Italy and Malta compared with Hungary, Latvia, Romania and Lithuania (Figure 6.2). Higher rates of premature death in these countries were mainly due to much higher mortality from ischaemic heart disease, accidents and alcohol-related deaths, as well as lung cancer in Hungary.

Mortality rates from treatable causes were also about three times lower in some Western and Northern European countries like Sweden, the Netherlands, France, Spain and Luxembourg than in Central and Eastern European countries such as Romania, Bulgaria, Latvia and Lithuania. The higher rates in the latter group of countries were mainly driven by higher mortality rates from ischaemic heart disease, stroke and some treatable cancers.

The COVID-19 pandemic will have a large impact on avoidable mortality in 2020 and 2021, particularly on preventable mortality as COVID-19 deaths were deemed to be preventable through public health interventions and vaccinations.

Definition and comparability

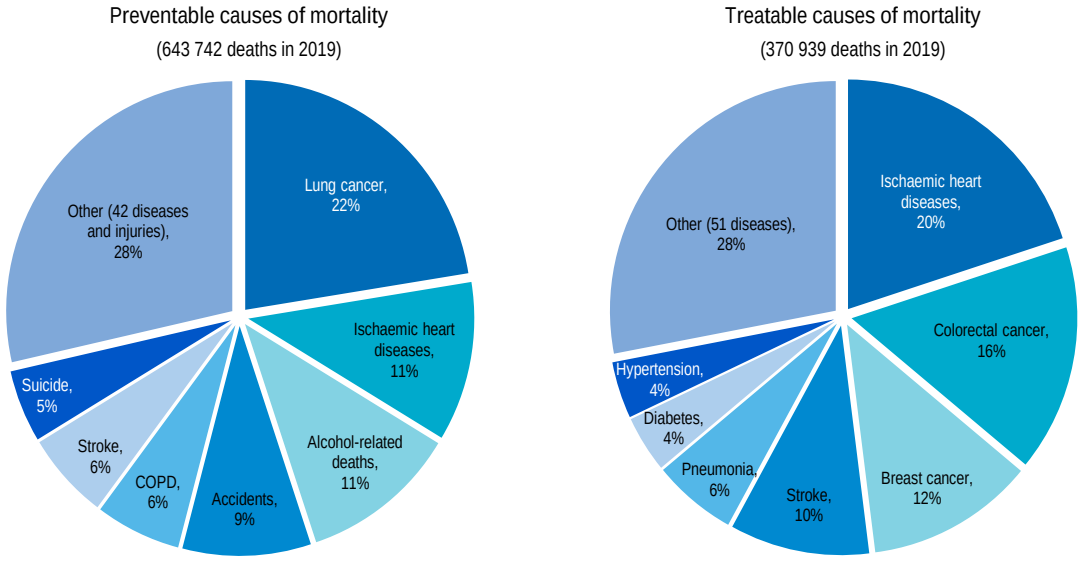
The data are based on the joint OECD and Eurostat lists of avoidable mortality, including a list of preventable and treatable causes of mortality. Preventable mortality is defined as causes of death that can be mainly avoided through effective public health and primary prevention interventions (i.e. before the onset of diseases/injuries, to reduce incidence). Treatable causes of mortality is defined as causes of death that can be mainly avoided through timely and effective health care interventions, including secondary prevention and treatment (i.e. after the onset of diseases, to reduce case-fatality).

The attribution of causes of death to the preventable or treatable mortality list was based on the criterion of whether it is predominantly prevention or health care interventions that can reduce death. Causes of death that can be both largely prevented and treated once they have occurred were attributed to the preventable category on the rationale that if these diseases are prevented, there would be no need for treatment. In cases when there was no strong evidence of predominance of preventability or treatability (e.g. ischaemic heart disease, stroke, diabetes, hypertension), the causes were allocated on a 50%-50% basis to the two categories to avoid double-counting the same cause of death. The age threshold of premature mortality is set at 74 years (inclusive) for all causes (OECD/Eurostat, 2022[1]).

References

OECD/Eurostat (2022), “Avoidable mortality: OECD/Eurostat lists of preventable and treatable causes of death”, OECD, Paris/Eurostat, Brussels, https://www.oecd.org/health/health-systems/Avoidable-mortality-2019-Joint-OECD-Eurostat-List-preventable-treatable-causes-of-death.pdf. [1]

Figure 6.1. Main causes of avoidable mortality in the European Union, 2019



Note: Data are based on the OECD/Eurostat revised definitions and lists of preventable and treatable causes of mortality. The lists attribute half of all deaths for some diseases (e.g. ischaemic heart diseases, stroke, diabetes and hypertension) to the preventable mortality list and the other half to treatable causes, so there is no double-counting of the same death. COPD = chronic obstructive pulmonary diseases.
Source: Eurostat Database (data refer to 2019, except for France which refers to 2017).

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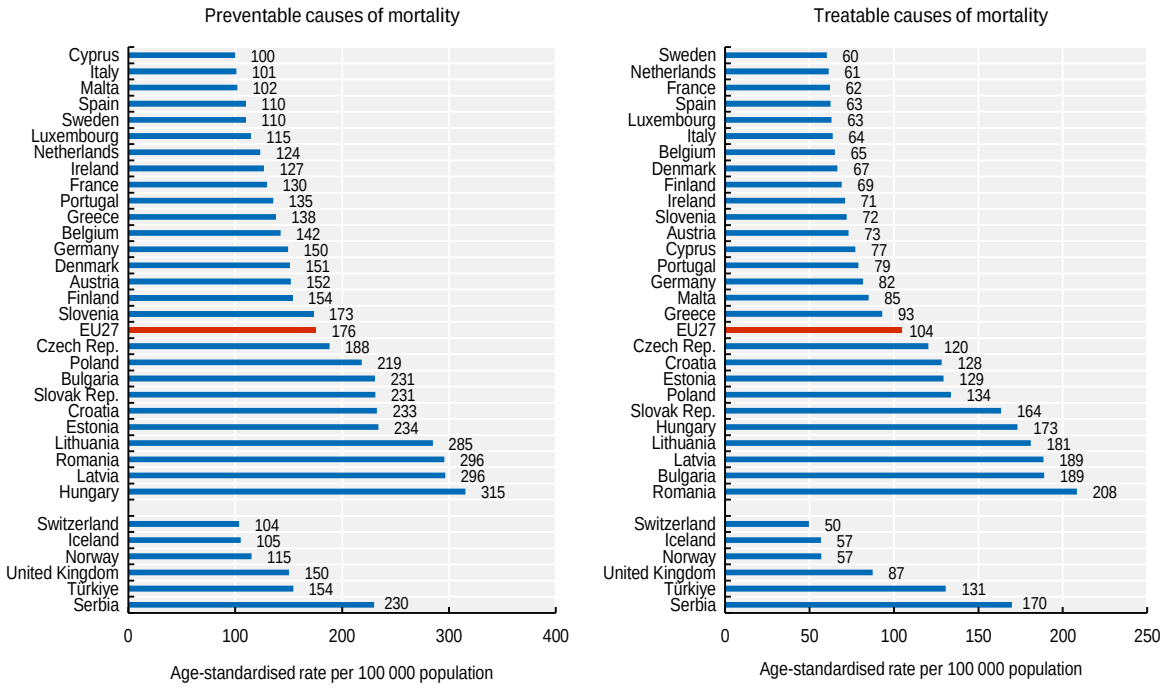
Figure 6.2. Mortality rates from avoidable causes, 2019



Note: The EU average is unweighted. 1. Data refer to 2017 for France and 2018 for the United Kingdom.
Source: Eurostat Database.

StatLink https://stat.link/djqti7

Routine vaccinations

Up to 50 million people annually are infected with seasonal influenza (flu) in EU countries, Iceland, Norway, Switzerland and the United Kingdom, and between 15 000 and 70 000 people die due to related causes (ECDC, 2022[1]). Older people and immuno-compromised individuals are at greatest risk of developing serious flu-related complications such as pneumonia and sepsis, which can result in severe illness or death. Although influenza vaccination is never wholly protective against all influenza viruses that may spread in a given year, it does offer some protection and can effectively reduce disease severity. WHO recommends that at least 75% of older people should be vaccinated against seasonal influenza. A 2009 EU Council Recommendation also set a goal of 75% vaccination coverage among older people (European Union, 2009[2]). All EU countries have national recommendations to promote influenza vaccination among older people, although the specific age threshold varies across countries.

Before the pandemic, in 2019, the flu vaccination coverage among people aged 65 and over was below 50% in most EU countries. The EU average was only 36%, and no country reached the 75% target (Figure 6.3). Vaccination rate against influenza among older people was particularly low in Central and Eastern European countries, with rates below 25% in all countries except Croatia.

In 2020, however, the pandemic helped to increase flu vaccination rate among older people in many countries, as countries sought to avoid a flu epidemic on top of the COVID-19 pandemic and the additional pressure that this would put on hospitals and other parts of health care systems. Denmark was the EU country that managed to increase its flu vaccination coverage among older people the most in 2020, with an increase of more than 20 percentage points to reach 75% coverage. Greece, Ireland, Spain, Malta, Romania and Norway also managed to increase substantially their vaccination rates in this age group. By contrast, some countries with already low influenza vaccination rates among the older population before the pandemic, such as Estonia and Latvia, did not see any increase during the first year of the pandemic, but rather some reductions.

Although the number and type of compulsory or recommended vaccines vary slightly across countries, all EU countries have established childhood vaccination programmes to reduce the spread of preventable infectious diseases and related mortality. Even before COVID-19, some parts of Europe had experienced resurgences of vaccine-preventable diseases due to declining vaccine coverage, driven to some extent to declines in public perceptions of vaccine safety. To counter these alarming trends, over the past years the European Commission has repeatedly called for the implementation of national policies and increased international co-operation to reduce vaccine hesitancy and improve vaccination coverage rates (European Commission, 2018[3]).

Figure 6.4 shows vaccination coverage for diphtheria, tetanus and pertussis (DTP) at 1 year of age. DTP vaccination requires three doses, and is an indicator of care continuity and access to primary care. Across EU countries, vaccination levels are high, with around 95% of children receiving the recommended DTP in 2020. Romania and Austria are the only two countries that do not meet the minimum immunisation level recommended by WHO for DTP (90%). This relatively low level of immunisation in Austria dates back to before the pandemic.

Definition and comparability

Influenza vaccination rates generally refer to the percentage of people aged 65 and over who have received an annual influenza vaccination, although in some countries the data refer to people aged over 60. Vaccination rates for DTP reflect the percentage of one-year-old children who have received three doses of the vaccination.

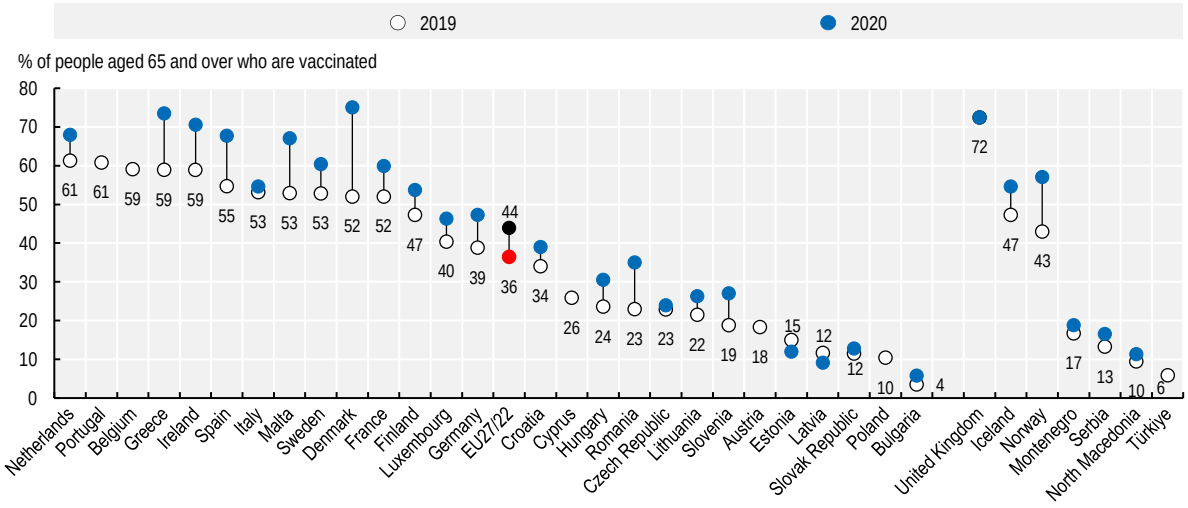
References

ECDC (2022), *Factsheet about seasonal influenza*. [1]

European Commission (2018), *Proposal for a Council Recommendation on Strengthening Cooperation against Vaccine Preventable Diseases*, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2018:244:FIN. [3]

European Union (2009), "Council Recommendation of 22 December 2009 on Seasonal Influenza Vaccination (2009/1019/EU)", *Official Journal of the European Union*. [2]

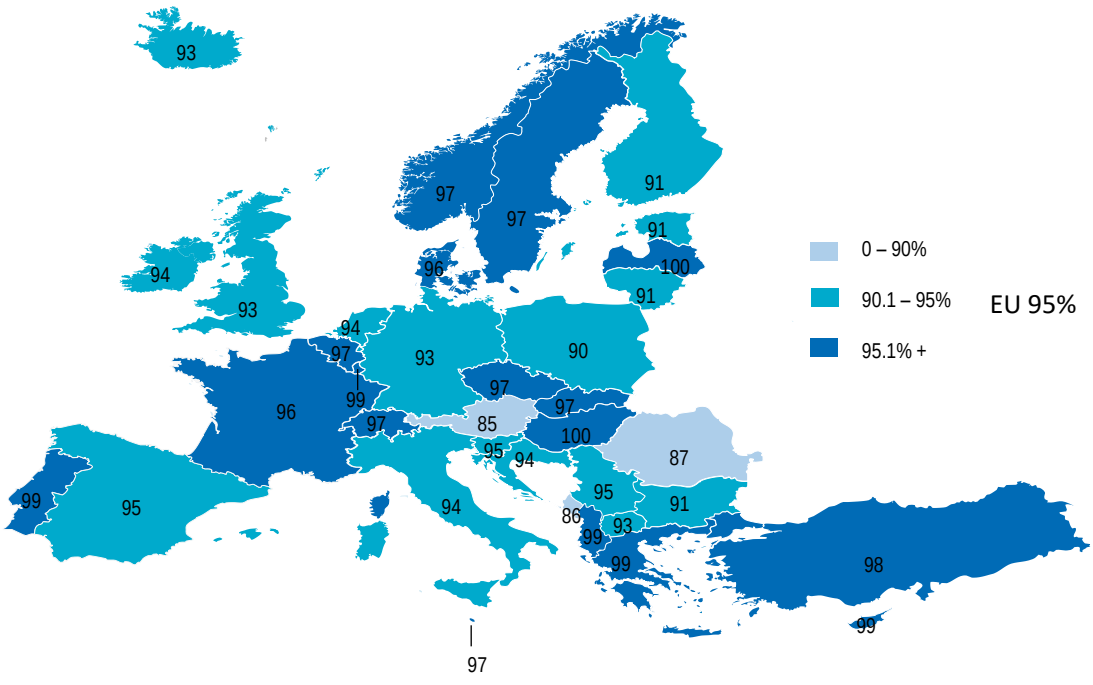
Figure 6.3. Vaccination against influenza, people aged 65 and over, 2019 (or nearest year) and 2020



Note: The EU average is unweighted.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/ilpq21

Figure 6.4. Vaccination against DTP, children aged 1, 2020 (or nearest year)



Note: The EU average is unweighted.
Source: WHO Immunization Portal.

Patient-reported experience

Promoting more people-centred care has become a growing priority across EU countries to improve the quality of care and the responsiveness to patients' needs and expectations. The COVID-19 pandemic has also made clear the need to institutionalise mechanisms to incorporate patient voices in policy decisions that have an impact on patient care (OECD, 2021[1]).

A growing number of countries are using patient-reported measures to assess how well health systems are serving people's needs. A number of national and European efforts have been undertaken to develop and use patient-reported experience measures (PREMs) and patient-reported outcomes measures (PROMs) to promote quality improvement and to monitor progress for patients, providers and policy makers. For example, patient-reported measures are used in Denmark and the Netherlands to provide feedback to individual providers to support quality improvement. In Denmark and France, PREMs are used by health care regulators for inspection, regulation and/or accreditation (Fujisawa and Klazinga, 2017[2]). In addition, the OECD's Patient-Reported Indicator Surveys (PaRIS) initiative is collecting patient-reported data on outcomes and experiences to improve the performance of health care providers and to drive changes in health systems, based on people's voices (OECD, 2021[3]).

Across nine EU countries, the majority of people report positive experiences in their interactions with doctors. Most people report that doctors spent enough time with them during consultation (Figure 6.5), that doctors provided easy-to-understand explanations (Figure 6.6) and involved them in care and treatment decisions (Figure 6.7). In 2020, the proportion of people rating positively their experience with doctors on these three aspects was particularly high in the Netherlands while it was lower in Poland and Sweden. Caution is required in interpreting variations across countries as differences in survey coverage, response rates and cultural differences in survey response patterns may contribute to international variation.

Most countries saw improvement on these patient-reported metrics over the past decade. For example, Estonia observed an almost 20 percentage point increase in patients reporting that their doctor provided easy-to-understand explanations between 2010 and 2019. However, some countries experienced reductions in positive rating of patient experience. The proportion of patients who reported spending enough time with a doctor during consultation decreased significantly in Germany, Sweden and Switzerland, and the proportion of patients being involved in care and treatment decisions decreased significantly in France, Sweden and Switzerland. Reduction in patients reporting positive experiences may be related to the COVID-19 crisis, which has impacted access and use of medical services for routine care (OECD, forthcoming[4]).

Definition and comparability

Data refer to patient experiences with any doctor in ambulatory settings in some countries, but patient experiences with a regular doctor or regular practice in others. While most countries collect these data through nationally representative population surveys, Portugal collects them through nationally representative service user (patient) surveys. The Commonwealth Fund's International Health Policy Surveys 2010 and 2020 were used as a data source for France, Germany, Norway Sweden, Switzerland and the United Kingdom, even though there are limitations relating to the small sample size and low response rates.

References

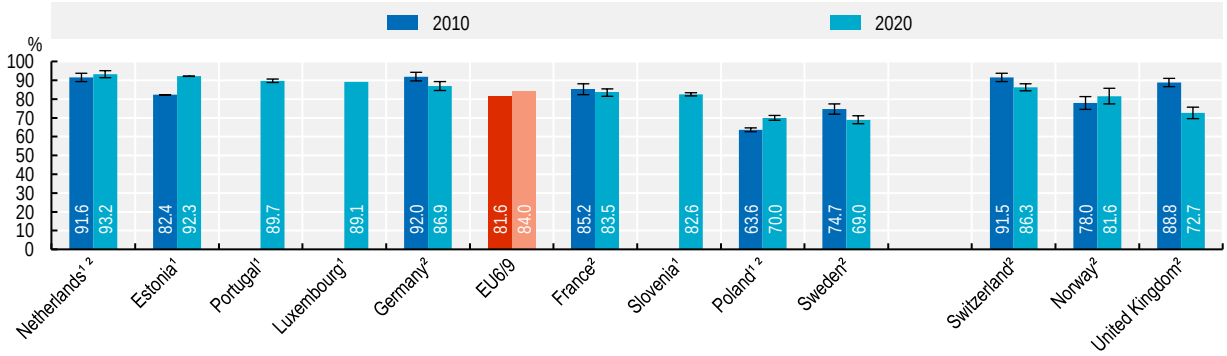
Fujisawa, R. and N. Klazinga (2017), "Measuring patient experiences (PREMS): Progress made by the OECD and its member countries between 2006 and 2016", *OECD Health Working Papers*, No. 102, OECD Publishing, Paris, https://doi.org/10.1787/893a07d2-en. [2]

OECD (2021), *Patient-Reported Indicators Surveys (PaRIS)*, OECD, Paris, http://www.oecd.org/health/paris.htm. [3]

OECD (2021), "Strengthening the frontline: How primary health care helps health systems adapt during the COVID-19 pandemic", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://doi.org/10.1787/9a5ae6da-en. [1]

OECD (forthcoming), *Ready for the Next Crisis? Investing in Resilient Health Systems*, OECD Publishing, Paris. [4]

Figure 6.5. Doctor spending enough time with patient during consultation, 2010 and 2020 (or nearest year)



Note: H lines show 95% confidence intervals. 1. Data from national sources. 2. Refer to patient experiences with regular doctor or regular practice.
Source: Commonwealth Fund International Health Policy Survey 2010 and 2020 and other national sources.

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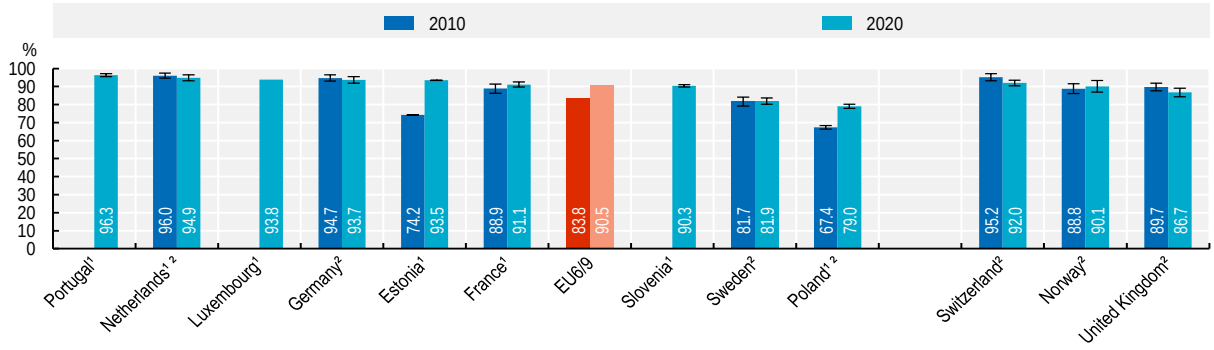
Figure 6.6. Doctor providing easy-to understand explanations, 2010 and 2020 (or nearest year)



Note: H lines show 95% confidence intervals. 1. Data from national sources. 2. Refer to patient experiences with regular doctor or regular practice.
Source: Commonwealth Fund International Health Policy Survey 2010 and 2020 and other national sources.

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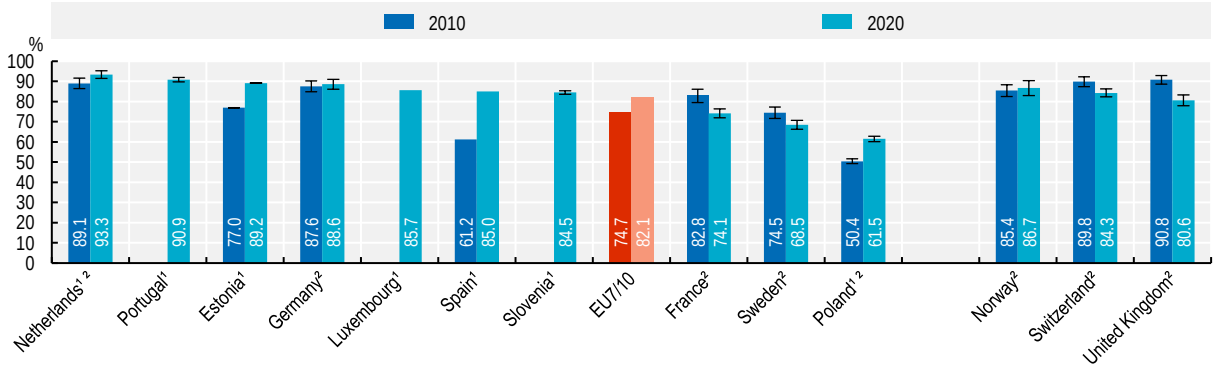
Figure 6.7. Doctor involving patient in decisions about care and treatment, 2010 and 2020 (or nearest year)



Note: H lines show 95% confidence intervals. 1. Data from national sources. 2. Refer to patient experiences with regular doctor or regular practice.
Source: Commonwealth Fund International Health Policy Survey 2010 and 2020 and other national sources.

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Avoidable hospital admissions

Asthma, chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF) and diabetes are four of the most common chronic health conditions. Approximately 6% of the EU population have asthma and 7% has diabetes (see indicator "Prevalence of diabetes and asthma" in Chapter 3). Between 5 and 10% of adults over age 40 have COPD and more than 15 million people in Europe are affected by CHF. Common to all these four conditions is the existence of a solid evidence base for effective patient management in primary care.

Effective primary care should serve as the first point of contact for people requiring continuous and co-ordinated care over time, notably for people living with chronic health conditions. A well-performing primary care system can reduce acute deterioration of people living with asthma, COPD, CHF or diabetes, thereby preventing unwanted and costly avoidable hospital admissions (OECD, 2020[1]).

Figure 6.8 shows hospital admission rates for the two chronic respiratory diseases, asthma and COPD together. In 2019, the average rate for EU countries was 210 hospital admissions per 100 000 population, of which 81% were due to COPD. Admission rates for both conditions varied more than eight-fold across EU countries, with Italy and Portugal reporting the lowest rates and Ireland, Romania and Denmark reporting the highest rates. On average across EU countries, admission rates for asthma and COPD decreased by 15% in the decade before the pandemic.

Hospital admission rates for CHF varied over seven-fold across EU countries in 2019. Portugal and the Netherlands had the lowest rates for this condition, whereas Poland, Lithuania, and the Slovak Republic had rates almost twice the EU average (Figure 6.9).

While avoidable hospital admissions for diabetes have also fallen in most countries in the decade before the pandemic, there was still a huge variation in admission rates across countries, ranging from about 40 to 50 per 100 000 people in Italy, Spain and the Netherlands up to 334 per 100 000 people in Romania (Figure 6.10).

Countries reporting 2020 data showed general declines in admissions during the first year of the pandemic, reflecting limited access to hospital or fear of being infected while in hospital. Early evidence shows that rates of diabetes-related complications increased in several countries during the pandemic due to decreased access to diabetes care and services. For example, in one Dutch hospital, the number of foot and toe amputations more than doubled in 2020 compared to 2019, likely due to delayed care for diabetic patients (Schuivens et al., 2020[2]). However, some countries made efforts to improve the quality of primary care during the pandemic. Ireland, for example, introduced the Chronic Disease Management Programme in 2020 to reduce health risk factors among people with chronic conditions and to improve disease management based on a patient care plan (Health Service Executive, 2022[3]).

Definition and comparability

The indicator is defined as the number of hospital admissions with a primary diagnosis of asthma, COPD, CHF or diabetes among people aged 15 years and over per 100 000 population. Avoidable admissions for diabetes include admissions for short-term and long-term complications and for uncontrolled diabetes without complications. Rates are age-sex standardised to the 2010 OECD population aged 15 years and over.

Disease prevalence, availability of hospital care, differences in coding practices and data coverage of the national hospital sector may affect the comparability of data.

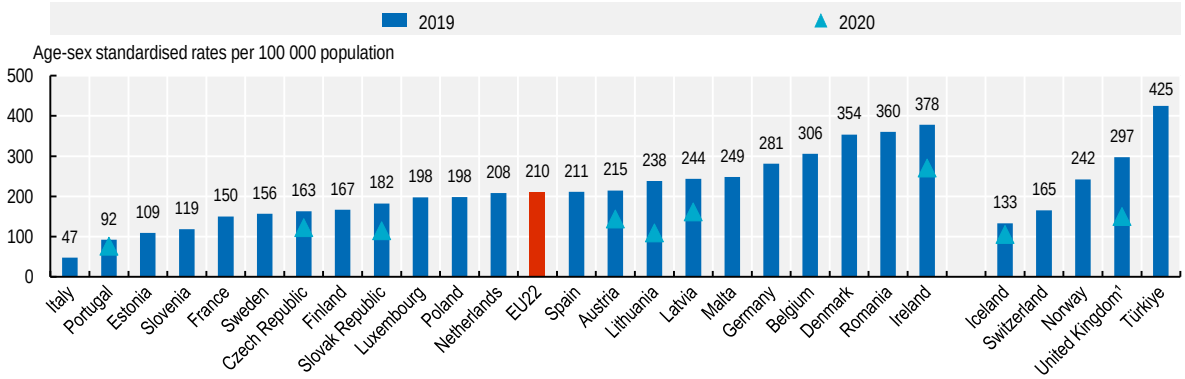
References

Health Service Executive (2022), *First report of the Structured Chronic Disease Management Programme in General Practice*, https://www.hse.ie/eng/services/publications/first-report-of-the-structured-chronic-disease-management-programme-in-general-practice.pdf. [3]

OECD (2020), *Realising the Potential of Primary Health Care*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/a92adee4-en. [1]

Schuivens, P. et al. (2020), "Impact of the COVID-19 Lockdown Strategy on Vascular Surgery Practice: More Major Amputations than Usual", *Annals of Vascular Surgery*, Vol. 69, pp. 74-79, https://doi.org/10.1016/j.avsg.2020.07.025. [2]

Figure 6.8. Asthma and COPD hospital admission in adults, 2019 (or nearest year) and 2020



Note: The EU average is unweighted. 1. 2020 data are provisional and include England only.
Source: OECD Health Statistics 2022.

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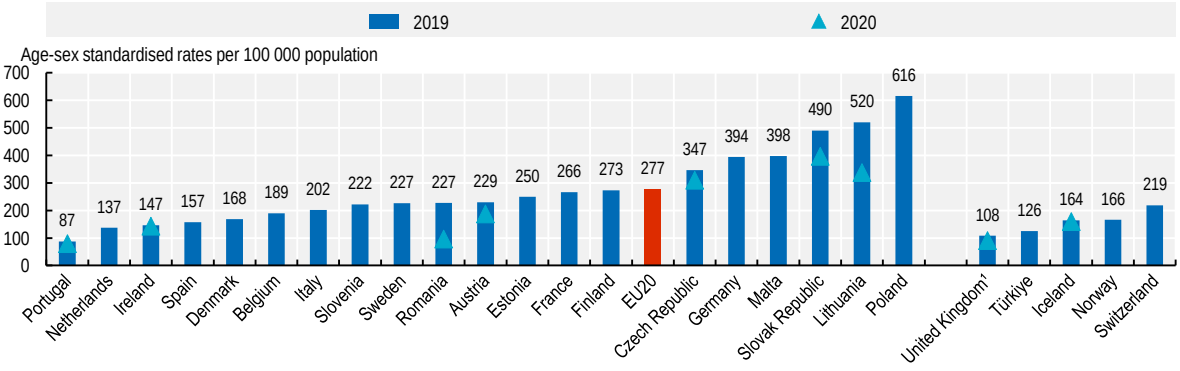
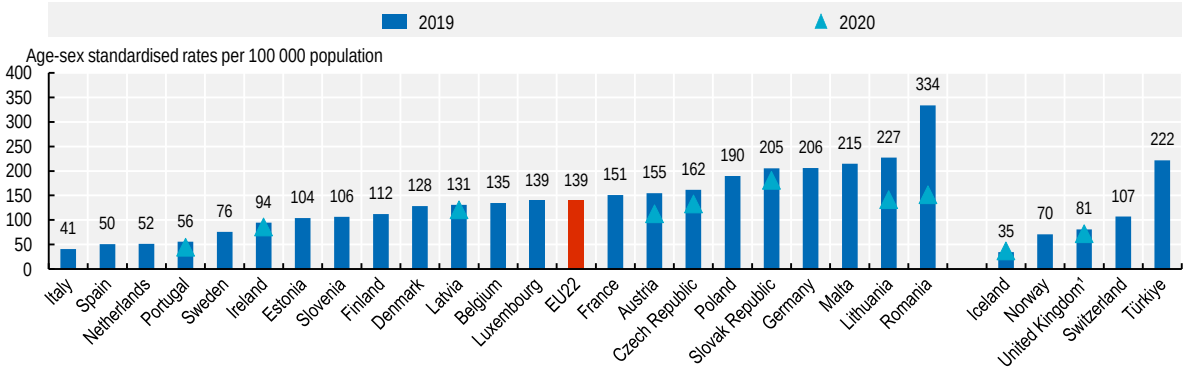
Figure 6.9. Congestive heart failure hospital admission in adults, 2019 (or nearest year) and 2020



Note: The EU average is unweighted. 1. 2020 data are provisional and include England only.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/j2del3

Figure 6.10. Diabetes hospital admission in adults, 2019 (or nearest year) and 2020



Note: The EU average is unweighted. 1. 2020 data are provisional and include England only.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/cwg04q

Integrated care

Despite national efforts to improve care integration, health systems remain fragmented when providing care across settings and providers. These failures have been magnified by the COVID-19 pandemic, where poor co-ordination between hospitals and community settings led to challenges in maintaining safe care (OECD, 2020[1]).

Policies for integrated care can improve patient outcomes and experiences. They also have the potential to increase value-for-money by reducing duplicative and unnecessary care. Key mechanisms for improving integrated care rely on strengthening governance of care delivery, developing interoperable information systems, and aligning financial incentives across providers (OECD, 2017[2]). Indicators such as mortality, readmissions and medication prescriptions after hospitalisation provide insight into how well care is co-ordinated across hospital and community care (Barrenho et al., 2022[3]).

Figure 6.11 shows mortality and readmission outcomes in the year after discharge following hospitalisation for ischaemic stroke or chronic heart failure (CHF). On average, among patients who were admitted with ischaemic stroke in 2018, during one year after discharge 57% had survived and were not hospitalised, 26% had survived and were readmitted to hospital (5% for stroke-related and 21% for other reasons) and 18% had died. For CHF patients, 41% who survived were not hospitalised, while 34% survived but were readmitted, and 25% died.

For stroke patients, one-year mortality ranged from below 12% in Denmark, Sweden and Norway to above 22% in Estonia and Lithuania. Thirty-day mortality was also low in Denmark, Sweden and Norway and high in Estonia and Lithuania (see indicator “Mortality following stroke”). For CHF patients, one-year mortality varied from 21% in Lithuania to 33% in Slovenia.

Hospital readmissions within one year of stroke ranged from 1% in Lithuania to 8% in Denmark for stroke-related reasons, and from 13% in Italy to 28% in the Czech Republic for other causes. For CHF patients, one-year readmission rates varied from 1% in Italy to 16% in the Czech Republic for CHF-related causes and from 18% in Estonia to 33% in Denmark for other causes.

Most countries achieved small improvements between 2013 and 2018 for all-cause mortality and readmission rates for those discharged with stroke and CHF (Figure 6.12) and mortality and readmission rates related to the primary diagnosis (Figure 6.13). Sweden demonstrated the largest improvements in reducing readmissions and mortality following an ischaemic stroke and CHF. However, some countries reported worsening rates, including Lithuania, Norway and Finland.

Countries have continued to adopt and refine reforms to improve integrated care, for example, Estonia adopted a new person-centred care network model in 2018. Finland will adopt in 2023 a new health care reform to drive integration of health and social care. Sweden is reforming care delivery closer to patients with a focus on the most vulnerable populations. Ongoing OECD analytical work is gaining understanding on the extent to which variation in outcomes across countries can be explained by reforms targeting reorganisation of care delivery, provider payment mechanisms and health data systems.

Definition and comparability

Integrated care indicators are calculated for people aged 15 and over at the day of admission presenting with an acute (urgent) episode of care for a first-time event of ischaemic stroke or CHF. A first-time event is defined among people with no disease-specific hospital admission in the previous five years. Countries applied this “washout” period except the Czech Republic. For more details on data comparability see (Barrenho et al., 2022[3]).

References

Barrenho, E. et al. (2022), “International comparisons of the quality and outcomes of integrated care: Findings of the OECD pilot on stroke and chronic heart failure”, *OECD Health Working Papers*, No. 142, OECD Publishing, Paris, https://doi.org/10.1787/480cf8a0-en. [3]

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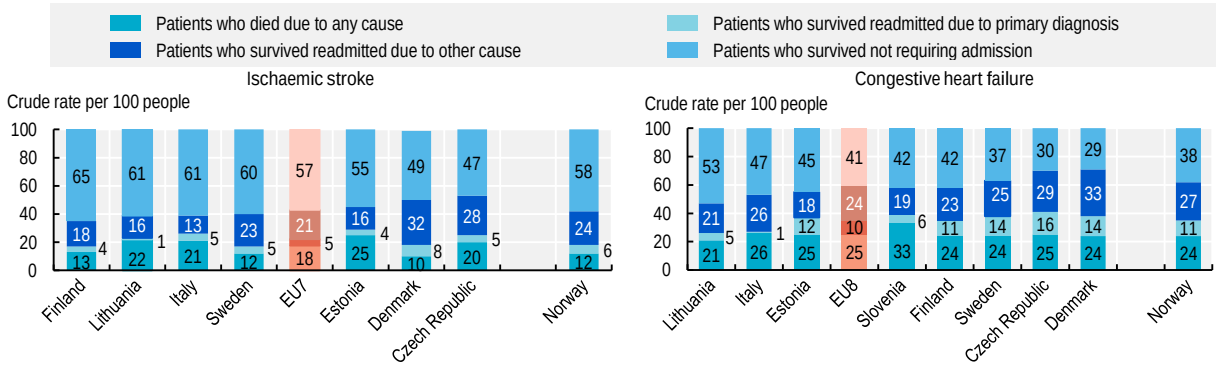
Figure 6.11. Patient outcomes one year after discharge from stroke and heart failure, 2018



Source: OECD Health Care Quality and Outcome (HCQO) Pilot Data Collection on Integrated Care 2021.

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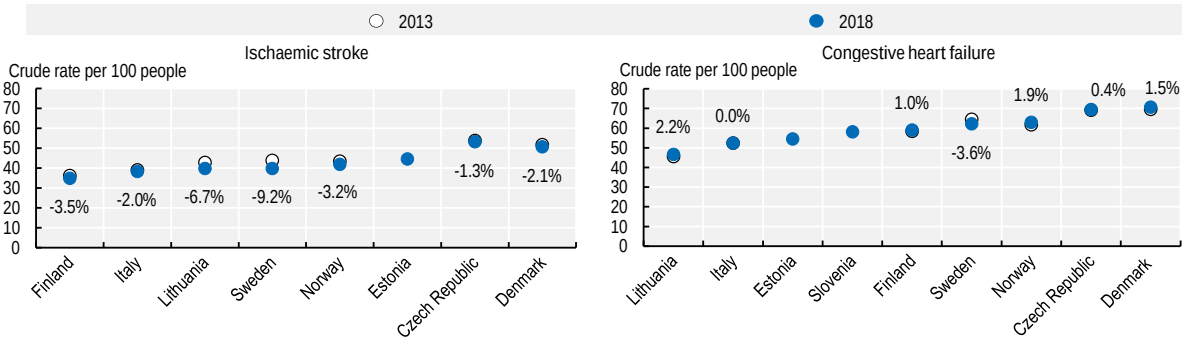
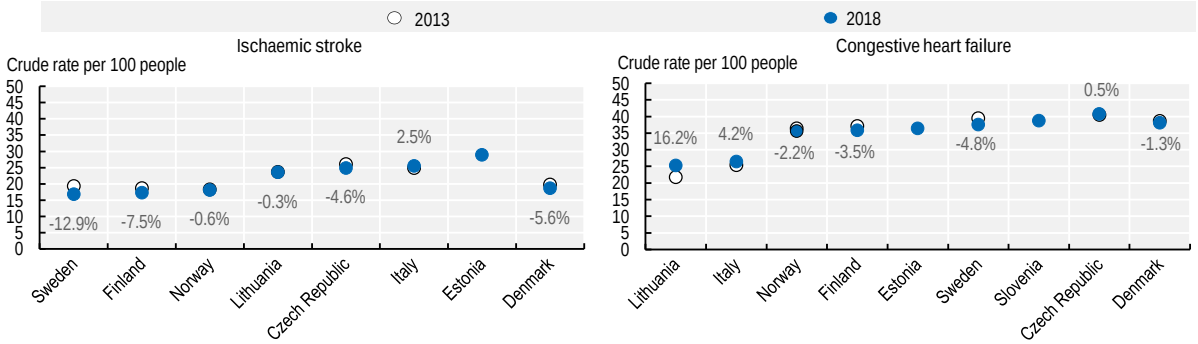
Figure 6.12. One-year all-cause readmission or mortality after discharge from stroke and heart failure, 2013 and 2018



Note: Data labels report relative percentage change, 2013-18.
Source: OECD Health Care Quality and Outcome (HCQO) Pilot Data Collection on Integrated Care 2021.

StatLink https://stat.link/mdy5hu

Figure 6.13. One-year readmission due to a primary diagnosis or mortality of any cause after discharge from stroke and heart failure, 2013 and 2018



Note: Data labels report relative percentage change, 2013-18.
Source: OECD Health Care Quality and Outcome (HCQO) Pilot Data Collection on Integrated Care 2021.

StatLink https://stat.link/be7xwg

Mortality following acute myocardial infarction (AMI)

Mortality due to coronary heart disease has declined substantially in recent decades, although these reductions have slowed down over the past decade before the pandemic in several Western European countries as several risk factors are on the rise (see indicator "Mortality from circulatory diseases" in Chapter 3). Nonetheless, AMI (heart attack) remains the leading cause of cardiovascular death in many EU countries, highlighting the need for further reductions in risk factors and care quality improvements (OECD/The King's Fund, 2020[1]). The COVID-19 crisis has also revealed the need to maintain access to high-quality acute care for AMI during public health emergencies.

Metrics of 30-day mortality after AMI hospital admission are reflective of processes of care, such as timely transport of patients and effective medical interventions. However, the indicator is influenced not only by the quality of care provided in hospitals but also by differences in the patterns of hospital transfers, length of stay, and AMI severity across countries.

Figure 6.14 shows mortality rates within 30 days of admission to hospital for AMI using unlinked data – that is, only counting deaths that occurred in the hospital where the patient was initially admitted. The lowest rates in 2019 were in Iceland, the Netherlands, Norway and Sweden (3.5% or less among patients aged 45 and over) while the highest rates were in Latvia (over 14%).

Figure 6.15 shows the same 30-day mortality rate but calculated based on linked data, whereby the deaths are recorded regardless of where they occurred after hospital admission (in the hospital where the patient was initially admitted, after transfer to another hospital, or after being discharged). Based on these linked data, the AMI mortality rates in 2019 ranged from 3% in the Netherlands to 17% in Latvia.

Case fatality rates for AMI decreased substantially between 2009 and 2019, according to both indicators. Across EU countries, the average rate fell from 8.7% to 6.3% for same-hospital deaths and from 11.8% to 9.0% for deaths in and out of hospital.

Between 2019 and 2020, however, case fatality rates increased in Austria, Lithuania, Poland and Portugal, while the rates were stable in Iceland, Latvia and the Slovak Republic. Changes in the trend reflect challenges faced by health systems in ensuring timely access to acute care during the COVID-19 crisis. In all countries reporting 2020 data, the number of people admitted to hospital due to AMI decreased. Reductions were particularly large in Poland and Portugal. Reductions in AMI admissions and related procedures may be the result either of reduced hospital use from patients (due to concern about COVID-19 exposure or not wanting to burden the health system) or of ambulance systems not being able to transfer patients in a timely manner due to a surge in demand for COVID-19 patients. In Germany for example, the severity of myocardial infarctions was almost four times higher during the pandemic than before (Primessnig, Pieske and Sherif, 2020[2]).

Definition and comparability

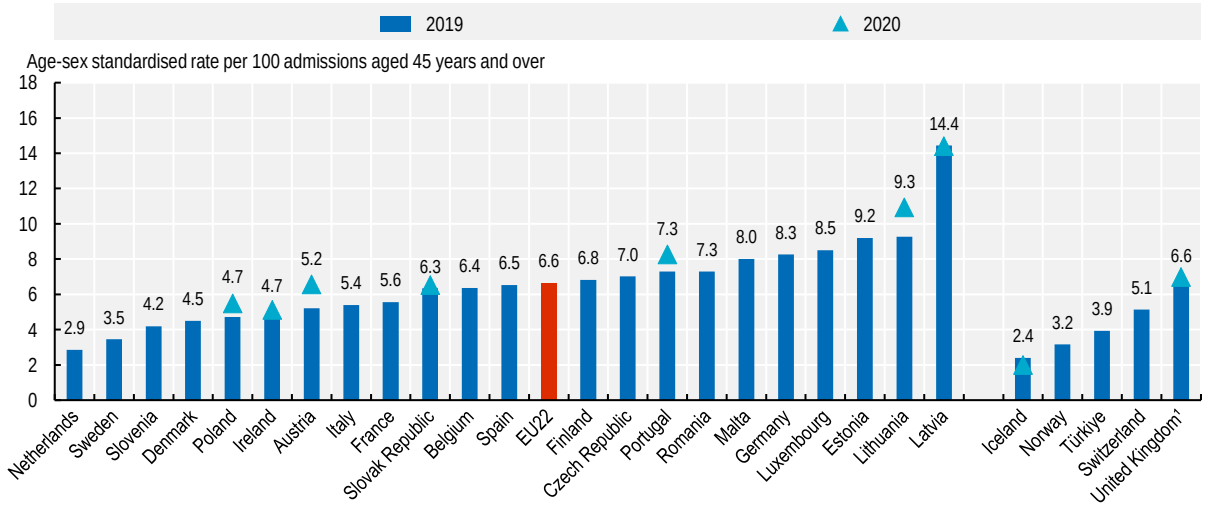
The case fatality rate measures the percentage of people aged 45 years and over who die within 30 days following hospital admission for a specific acute condition. The linked data-based method requiring a unique patient identifier, is considered more robust than the rates based on unlinked data. Rates are age-standardised to the 2010 OECD population aged 45 and over admitted to hospital for AMI, using International Classification of Diseases, tenth revision (ICD-10) codes I21-I22.

References

OECD/The King's Fund (2020), *Is Cardiovascular Disease Slowing Improvements in Life Expectancy?: OECD and The King's Fund Workshop Proceedings*, OECD Publishing, Paris, https://doi.org/10.1787/47a04a11-en. [1]

Primessnig, U., B. Pieske and M. Sherif (2020), "Increased mortality and worse cardiac outcome of acute myocardial infarction during the early COVID-19 pandemic", *ESC Heart Failure*, Vol. 8/1, pp. 333-343, https://doi.org/10.1002/ehf2.13075. [2]

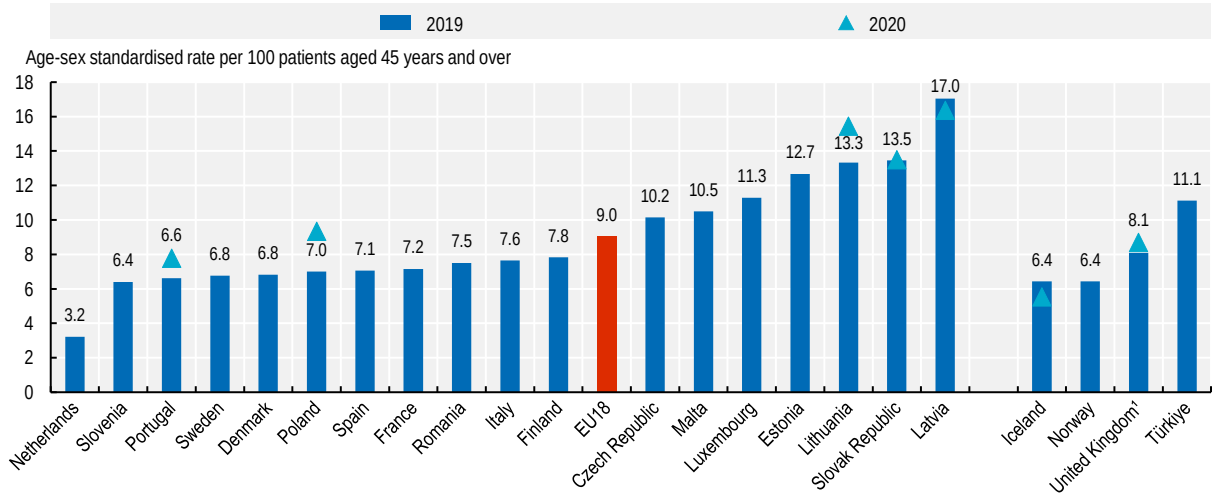
Figure 6.14. Thirty-day mortality after hospital admission for AMI based on unlinked data, 2019 (or nearest year) and 2020



Note: The EU average is unweighted. 1. 2020 data are provisional and include England only.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/8a3bsn

Figure 6.15. Thirty-day mortality after hospital admission for AMI based on linked data, 2019 (or nearest year) and 2020



Note: The EU average is unweighted. 1. 2020 data are provisional and include England only.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/418wkx

Mortality following stroke

Stroke is a leading cause of death, accounting for 8% of deaths across the EU in 2019 (see indicators "Main causes of mortality" and "Mortality from circulatory diseases" in Chapter 3). Stroke is a serious, potentially life-threatening event that occurs when the blood supply to a part of the brain is interrupted. Of the two types of stroke, about 85% are ischaemic and 15% are haemorrhagic.

Figure 6.16 shows mortality rates within 30 days of hospital admission for ischaemic stroke where the death occurred in the same hospital as the initial admission (unlinked data), whereas Figure 6.17 shows mortality rates where deaths are recorded regardless of where they occurred, including in another hospital or outside the hospital (linked data).

Using unlinked data, the mortality rates within 30 days of hospital admission for ischaemic stroke were highest in Latvia and Malta, with rates above 15% in 2019. Norway, Iceland and Denmark reported the lowest rates, at less than 5%. Generally, countries with lower 30-day mortality rates for ischaemic stroke than the EU average also had lower 30-day mortality rates for acute myocardial infarction (AMI) (see indicator "Mortality following acute myocardial infarction"). This suggests that certain characteristics of acute care delivery have an impact on both stroke and AMI patients' outcomes.

Across countries that reported linked data, the case-fatality rates were highest in Latvia, with more than 25% of patients dying within 30 days of being admitted to hospital for stroke. They were lowest in the Netherlands and Norway, where case-fatality rates were less than 8%. These rates are higher than those based on unlinked data because they capture all deaths (in the hospital where the patient was initially admitted, after transfer to another hospital, or after being discharged). Generally, countries that show 30-day mortality rates for ischaemic stroke lower than the EU average also tend to show low 1-year mortality rates for ischaemic stroke (see indicator "Integrated Care").

Treatment for ischaemic stroke has advanced substantially over the last decades, with systems and processes now in place in many European countries to identify suspected ischaemic stroke patients and to deliver acute reperfusion therapy quickly (OECD, 2015[1]). Between 2009 and 2019, 30-day case-fatality rates for ischaemic stroke decreased by about 20% on average across EU countries, based either on unlinked data or linked data.

However, between 2019 and 2020, case fatality rates increased in Lithuania, Portugal and Romania, while they remained stable in other countries such as Austria, Iceland, Ireland, the Slovak Republic and the United Kingdom. During the first year of the pandemic, the number of people admitted to hospital due to ischaemic stroke decreased in most of the above-mentioned countries – particularly in Portugal and Romania, where the reduction was also large for AMI (see indicator "Mortality following acute myocardial infarction"). Reductions in hospital admissions and procedures linked to stroke were also reported in France, Italy, Germany and Spain. These reductions have been attributed to stroke patients not seeking or receiving hospital care immediately due to a fear of becoming infected with COVID-19, or because pre-hospital triage and ambulance systems did not function as well and as promptly due to surges in demand. This has been evidenced by more severe presentations of stroke at hospitals in some countries, such as the United Kingdom (Padmanabhan et al., 2021[2]). To tackle resource constraints, countries such as France, Germany and Italy reorganised pathways for acute stroke care and sometimes concentrated stroke care in fewer hospitals (Bersano et al., 2020[3]).

Definition and comparability

Case fatality rates are defined in indicator "Mortality following acute myocardial infarction". Case fatality rates for ischaemic stroke refer to ICD-10 codes I63-I64.

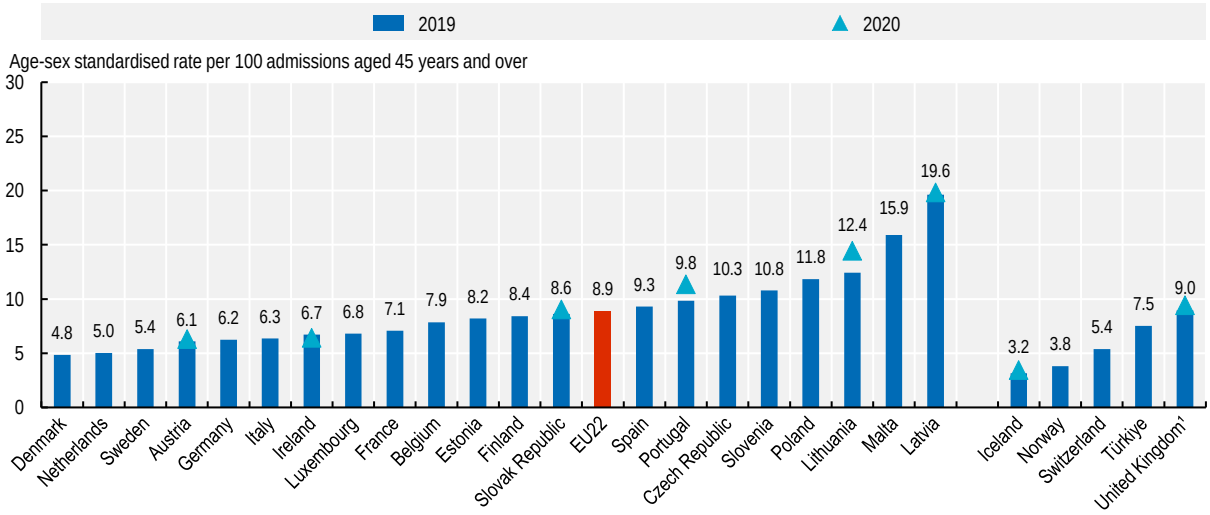
References

Bersano, A. et al. (2020), "Stroke care during the COVID-19 pandemic: experience from three large European countries", *European Journal of Neurology*, Vol. 27/9, pp. 1794-1800, https://doi.org/10.1111/ene.14375. [3]

OECD (2015), *Cardiovascular Disease and Diabetes: Policies for Better Health and Quality of Care*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264233010-en. [1]

Padmanabhan, N. et al. (2021), "Impact of COVID-19 on stroke admissions, treatments, and outcomes at a comprehensive stroke centre in the United Kingdom", *Neurological Sciences*, Vol. 42/1, p. 15, https://doi.org/10.1007/S10072-020-04775-X. [2]

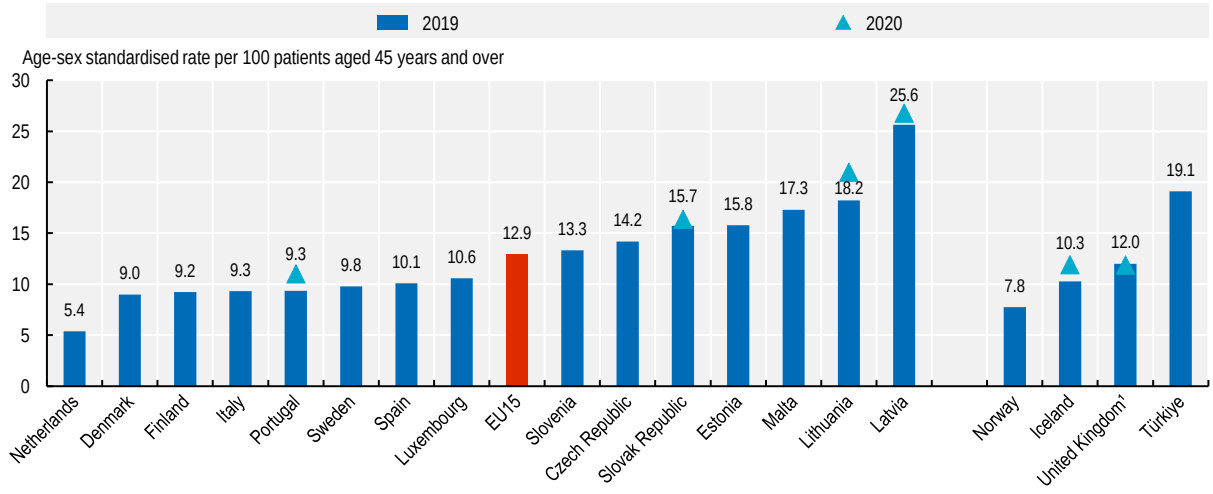
Figure 6.16. Thirty-day mortality after admission to hospital for ischaemic stroke based on unlinked data, 2019 (or nearest year) and 2020



Note: The EU average is unweighted. 1. 2020 data are provisional and include England only.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/1z69xh

Figure 6.17. Thirty-day mortality after admission to hospital for ischaemic stroke based on linked data, 2019 (or nearest year) and 2020



Note: The EU average is unweighted. 1. 2020 data are provisional and include England only.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/95zn2s

Hip and knee surgery

Hip fractures are a common cause of hospitalisation, typically caused by falls particularly among those with loss of skeletal strength from osteoporosis.

In nearly all instances following a hip fracture, surgical intervention is required to repair or replace the hip joint. There is general agreement that early surgical intervention improves patient outcomes and minimises the risk of complications. For this reason, surgery should occur within two days (48 hours) of hospitalisation. Some national guidelines stipulate an even more rapid intervention. In the United Kingdom, the National Institute for Health and Care Excellence (NICE) clinical guidelines recommend that hip fracture surgery be performed on the day of hospital admission or the next day (NICE, 2017[1]).

Time to surgery is influenced by many factors, including hospitals' surgical and staffing capacity and inter-hospital flow and access (e.g. timely discharges creating hospital capacity for new patients). In 2019, three out of four patients aged 65 and over on average across EU countries underwent surgery within two days following admission with a hip fracture, with most of them being treated either on the same day of admission or the next day (Figure 6.18). In Denmark and the Netherlands, the proportion of patients operated within two days reached more than 95%. By contrast, less than half of patients aged 65 and over were operated within two days following their admission for a hip fracture in Latvia and Portugal.

Osteoarthritis is a growing cause of disability in Europe due to population ageing and the growing prevalence of obesity. It often requires hip or knee joint replacement surgery if symptoms persist after exhausting non-surgical treatment such as physical therapy and weight loss. Patient-reported outcome measures (PROMs) can be used to assess the effect of a joint replacement surgery from the patient's perspective by using instruments such as the Oxford Hip/Knee Score and the Hip/Knee Disability and Osteoarthritis Outcome Score – Physical Short Form (HOOS-PS/KOOS-PS). A higher score denotes better function and reduced level of pain for Oxford Scores and better function for HOOS-PS and KOOS-PS.

Figure 6.19 shows the average improvement on the Oxford Hip Score (left) and HOOS-PS (right) scales reported by patients after elective hip replacement surgery for osteoarthritis across selected joint replacement registries. Results have been adjusted for preoperative score, age and sex. The average mean adjusted change was 21 points out of a 48-point scale on the Oxford Hip Score and 33 points out of a 100-point scale on the HOOS-PS scale.

Figure 6.20 shows the adjusted mean improvement reported by patients using the Oxford Knee Score (left) and KOOS-PS (right) after elective knee replacement surgery for osteoarthritis. The average mean adjusted change was 18 points out of a 48-point scale on the Oxford Knee Score and 21 points out of a 100-point scale on the KOOS-PS.

Definition and comparability

The indicator of waiting times for surgery following admission for a hip fracture is defined as the proportion of patients aged 65 years and over admitted to hospital in a specified year with a diagnosis of upper femur fracture, who had surgery initiated within two calendar days of their admission to hospital. The capacity to capture time of admission and surgery in hospital administrative data varies across countries. While cases where the hip fracture occurred during admission to hospital should be excluded, not all countries have a "present on admission" flag in their datasets to enable them to identify such cases accurately.

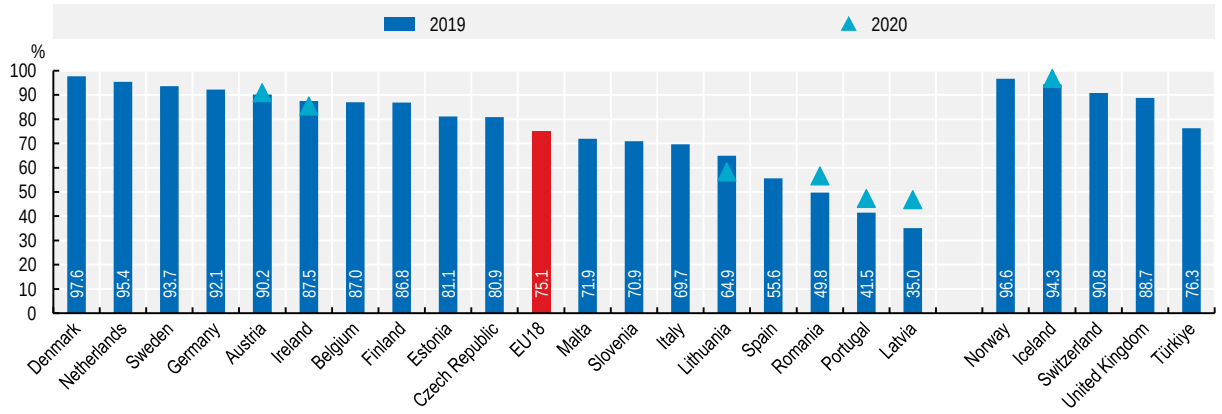
PROMs are based on data from registries in countries using data on adult patients undergoing elective hip or knee replacement surgery with a principal diagnosis of osteoarthritis. A higher score denotes better outcomes on all these scales (Kendir et al., 2022[2]).

References

Kendir, C. et al. (2022), "International assessment of the use and results of patient-reported outcome measures for hip and knee replacement surgery: Findings of the OECD Patient-Reported Indicator Surveys (PaRIS) working group on hip and knee replacement surgery", *OECD Health Working Papers*, No. 148, OECD Publishing, Paris, https://doi.org/10.1787/6da7f06b-en. [2]

NICE (2017), "Hip Fracture: The Management of Hip Fracture in Adults", *NICE Clinical Guideline No. 124, issued June 2011, last updated May 2017*. [1]

Figure 6.18. Hip fracture surgery initiation for patients aged 65 and over within two days of admission, 2019 (or nearest year) and 2020



Note: The EU average is unweighted.
Source: OECD Health Statistics 2022.

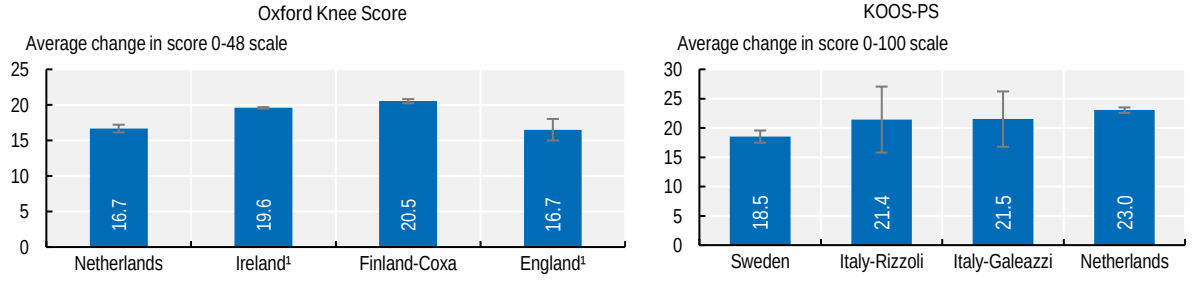
StatLink https://stat.link/dujyv5

Figure 6.19. Improvement in patient-reported hip replacement outcomes, 2020 (or nearest year)

Note: H lines show 95% confidence intervals. 1. Postoperative collection at 6 months (all others at 12 months).
Source: PaRIS Hip/Knee Replacement Pilot Data Collection, 2020-21.

StatLink https://stat.link/e2m1t9

Figure 6.20. Improvement in patient-reported knee replacement outcomes, 2020 (or nearest year)



Note: H lines show 95% confidence intervals. 1. Postoperative collection at 6 months (all others at 12 months).
Source: PaRIS Hip/Knee Replacement Pilot Data Collection, 2020-21.

StatLink https://stat.link/rtvl1z

Breast cancer screening and outcomes

Breast cancer is the most frequent cancer among women in Europe. Risk factors for breast cancer include age, genetic predisposition, oestrogen replacement therapy, and lifestyle factors including obesity, physical inactivity, nutrition habits and alcohol consumption. While Europe's Beating Cancer Plan aims to address challenges in prevention, treatment and care for all cancers (see indicator on "Cervical and colorectal cancer screening"), the European Commission Initiative on Breast Cancer supports EU countries in their efforts to reduce the burden of breast cancer from screening and diagnosis to treatment and palliative care.

Since the 1980s, most European countries have adopted breast cancer screening programmes to improve early detection rates (OECD, 2013[1]). The proportion of women of screening age (usually 50-69 years of age) receiving mammography over the past two years was over 60% before the onset of the COVID-19 pandemic (Figure 6.21). The quality and outcomes of breast cancer care have generally improved in the years before the pandemic, but the quality of cancer care was adversely affected during the pandemic by delays in access to treatment and postponement of follow-up.

Many health systems prioritised urgent care needs during the pandemic, temporarily pausing cancer screening programmes. Many women also delayed seeking health care to reduce the risk of COVID-19 transmission, which led to a decline in breast cancer screening uptake in many EU countries (Figure 6.21; see also Chapter 2 on the disruptions of health services during the pandemic).

The stage of the disease at diagnosis can signal timeliness in accessing high-quality breast cancer screening services and routine care and can impact survival outcomes. During 2010-14, about half of women diagnosed with breast cancer in EU countries were at an early stage, while 10% of women were diagnosed at an advanced stage (Figure 6.22).

Patient-reported outcome measures (PROMs) are used to improve quality of breast cancer care based on each patient's own assessment of quality of life. PROMs were also used during the COVID-19 crisis to monitor the changes in patients' preferences and conditions. For example, according to a Dutch study (Bargon, 2021[2]), almost one in three breast cancer patients and survivors reported that their emotional functioning and mental health declined from pre-pandemic levels.

Figure 6.23 presents crude (unadjusted) breast satisfaction outcome scores at 6-12 months following breast cancer procedures (breast-conserving therapy and reconstruction following mastectomy) for nine clinical sites in eight countries. Results suggest higher breast satisfaction outcomes after breast-conserving therapy in nearly all sites, although the difference is often not statistically significant because of small sample sizes.

Definition and comparability

Screening rates are based on programme data or survey data when programme data are not available or incomplete. Survey-based results may be affected by recall bias.

Analysis of stage distribution was performed centrally as part of the CONCORD programme led by the London School of Hygiene and Tropical Medicine. The stage at diagnosis for breast cancer is categorised according to the Tumour, Nodes, Metastasis staging system.

PROMs data are presented for selected programmes and are not representative for each country (OECD/Kronikgune, 2022[3]). Outcomes were measured using the relevant postoperative breast satisfaction scales from the BREAST-Q tool, an internationally validated instrument used to measure breast surgery outcomes reported by patients. A higher score denotes better outcomes. Caution is advised when comparing the results of participating sites because of small sample sizes and differences in the period when PROMs were measured.

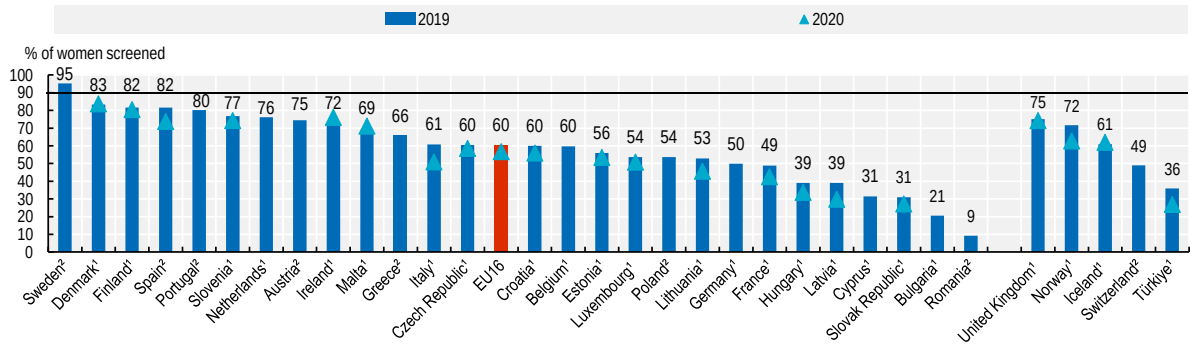
References

Bargon, C. (2021), "Impact of the COVID-19 Pandemic on Patient-Reported Outcomes of Breast Cancer Patients and Survivors", *JNCI Cancer Spectrum*, Vol. 5/1, p. pkaa104, https://doi.org/10.1093/jncics/pkaa104. [2]

OECD (2013), *Cancer Care: Assuring Quality to Improve Survival*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264181052-en. [1]

OECD/Kronikgune (2022), "Patient Reported Outcomes Measures (PROMs) for Breast Cancer Care: Draft technical report on data collected between 2020 and 2021", OECD, Paris/Kronikgune, Barakaldo, https://www.oecd.org/health/paris/OECD-PaRIS-PROMs-for-breast-cancer-care.pdf. [3]

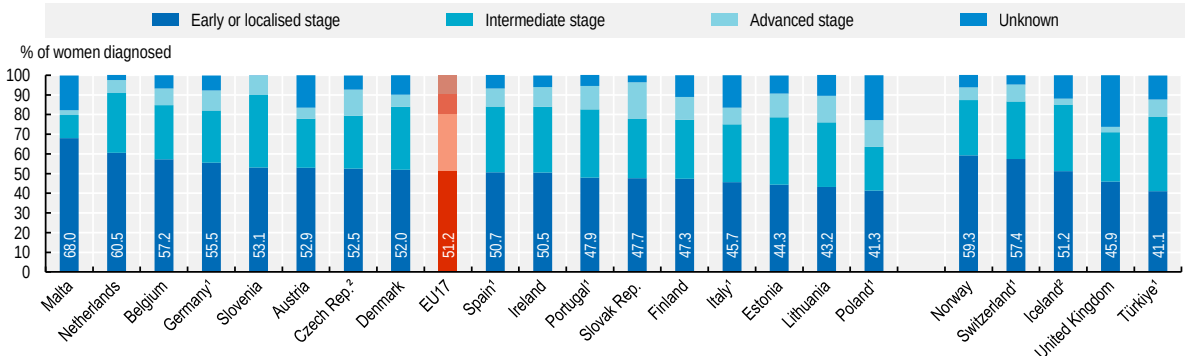
Figure 6.21. Mammography screening in women aged 50-69 within the past two years, 2019 (or nearest year) and 2020



Note: The EU average is unweighted. The 90% line reflects the EU target by 2025. 1. Programme data. 2. Survey data.
Source: OECD Health Statistics 2022 (in many countries, the survey data come from the 2019 European Health Interview Survey).

StatLink https://stat.link/53u62l

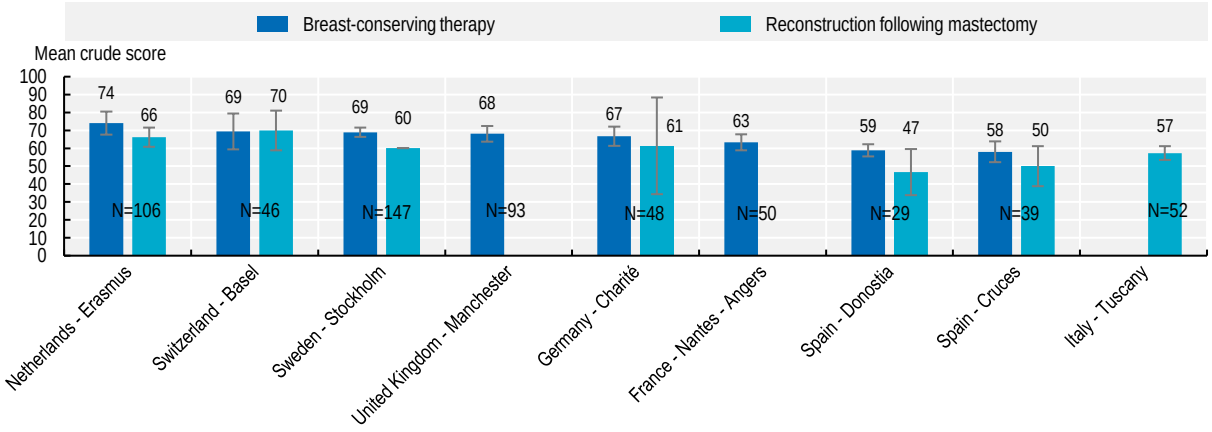
Figure 6.22. Breast cancer stage distribution, women diagnosed during 2010-14



Note: The EU average is unweighted. 1. Data represent coverage of less than 100% of the national population. 2. Data for 2004-09.
Source: CONCORD Programme, London School of Hygiene and Tropical Medicine.

StatLink https://stat.link/irxjnv

Figure 6.23. Self-reported breast satisfaction outcome scores 6-12 months after surgery, 2019-20



Note: H lines show 95% confidence intervals. Weighted average based on site sample size. Data labels at the base of the histogram refer to the sample size at each site.
Source: PaRIS Breast Cancer PROMs pilot data collection 2021.

StatLink https://stat.link/1deqjb

Cervical and colorectal cancer screening

Cervical cancer is one of the few cancers that may be largely preventable for the new generations of women through HPV vaccination programmes of young girls and boys, that have been by now integrated in most countries. Over the past 15 years, all EU countries except Poland launched HPV vaccination programmes, starting first with young girls and gradually expanding the programmes to young boys also (ECDC, 2020[1]). In addition, over three-fourths of EU countries have implemented population-based cervical cancer screening programmes (European Commission, 2017[2]).

WHO recommends countries strive to reach an incidence rate of less than 4 new cases of cervical cancer per 100 000 women each year, but European countries have yet to achieve this target. To reach this goal, WHO recommends 90% HPV vaccination coverage among girls by age 15, 70% coverage of cervical cancer screening at ages 35 and 45, and improvement of the coverage of treatment (i.e. treating 90% of women with pre-cancer and managing 90% of women with invasive cancer) (WHO, 2020[3]).

In the year before the pandemic (2019), the proportion of women aged 20-69 who had been screened for cervical cancer within the past three years remained low in many European countries (Figure 6.24). The proportion was particularly low in Malta (22%) and Hungary (30%).

Cervical cancer screening uptake was adversely impacted by the COVID-19 pandemic, as was breast cancer screening (see indicator “Breast cancer screening and outcomes”). All countries that reported 2020 data had a lower screening rates than the year before, except Malta and France. The decline was largest in Luxembourg, where screening rates decreased by almost 9 percentage points.

Colorectal cancer was the second most common cause of cancer death in men (after lung cancer) and the third most common cause (after breast and lung cancers) among women in Europe in 2019 (see indicator “Mortality from cancer” in Chapter 3). The main risk factors for colorectal cancer are age, ulcerative colitis, a personal or family history of colorectal cancer or polyps, and lifestyle factors (such as a diet high in fat and low in fibre, physical inactivity, obesity, tobacco and alcohol consumption). The European Commission Initiative on Colorectal Cancer develops evidence-based guidelines for colorectal cancer prevention, screening and diagnosis and quality assurance scheme throughout the entire care pathway from prevention, screening and diagnosis to treatment, follow-up and palliative care.

Following the EU Council recommendations on cancer screening in 2003, a growing number of European countries have introduced nationwide screening programmes for colorectal cancer. Country policies typically support routine faecal occult blood tests for people in their 50s and 60s (European Commission, 2017[2]).

Participation rates in colorectal cancer screening programmes varies from a high of 80% in Finland to a low of less than 5% in Cyprus, Bulgaria and Romania (Figure 6.25). Similar to cervical cancer screening, almost all countries reporting 2020 data had lower participation rates in 2020 than in 2019. The largest decline was 8 percentage points in Lithuania and 7 percentage points in Ireland.

Definition and comparability

Screening rates are based on programme or survey data. Programme data are collected to monitor national screening programmes, but differences in target age, screening frequency and screening methods may lead to variations in the data reported across countries. Survey data may be affected by recall bias. Survey data on colorectal cancer are sourced from the European Health Interview Survey (EHIS) 2019 and refer to people aged 50-74 who report having had faecal occult blood tests over the past two years.

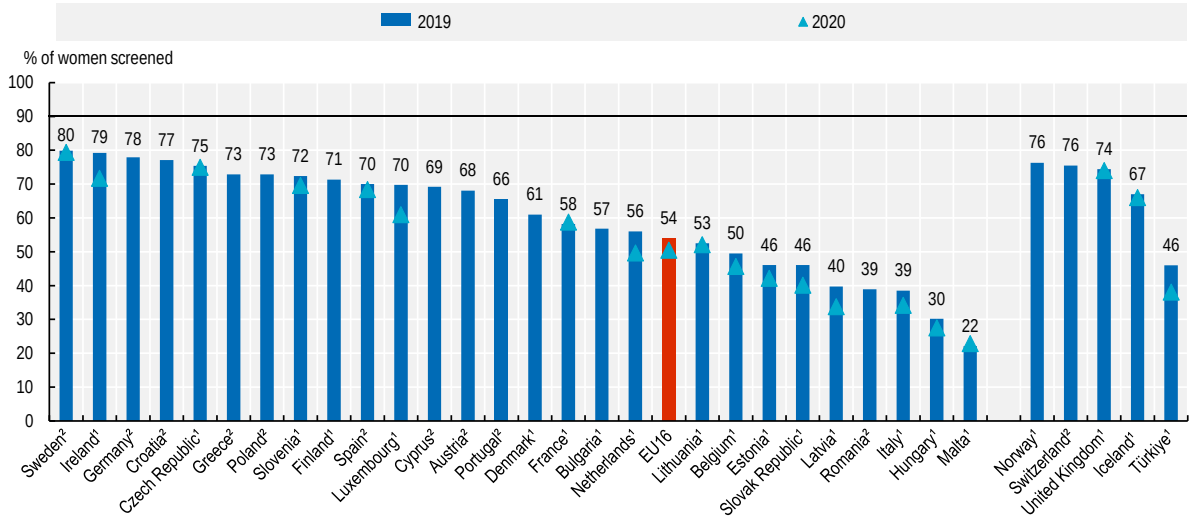
References

ECDC (2020), *Guidance on HPV vaccination in EU*. [1]

European Commission (2017), *Cancer Screening in the European Union: Report on the implementation of the Council Recommendation on cancer screening*, https://ec.europa.eu/health/sites/health/files/major_chronic_diseases/docs/2017_cancerscreening_2ndreportimplementation_en.pdf. [2]

WHO (2020), *Global strategy to accelerate the elimination of cervical cancer as a public health problem*, World Health Organization, https://apps.who.int/iris/handle/10665/336583. [3]

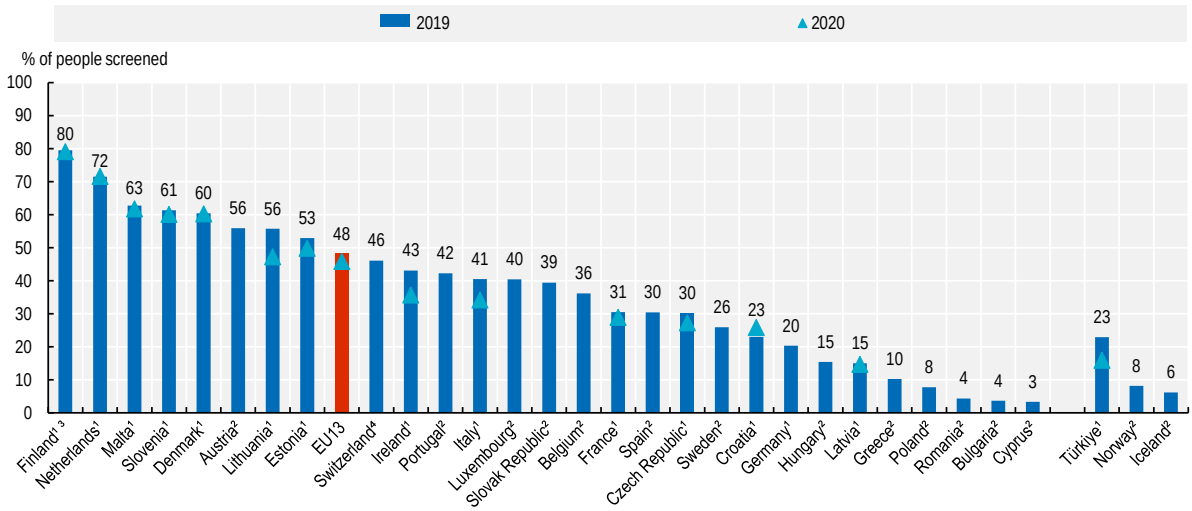
Figure 6.24. Cervical cancer screening, 2019 (or nearest year) and 2020



Note: Women aged 20-69 screened within the past 2 years. The EU average is unweighted. The 90% line reflects the EU target by 2025. 1. Programme data. 2. Survey data.
Source: OECD Health Statistics 2022 and Eurostat database.

StatLink https://stat.link/t5vmr0

Figure 6.25. Colorectal cancer screening, 2019 (or nearest year) and 2020



Note: The EU average is unweighted. 1. Programme data are based on national programmes that may vary in terms of age group and frequency. 2. Survey data based on European Health Interview Survey (EHIS) and refer to people aged 50-74 screened over the past two years. 3. Data refer to regional pilots. 4. Survey data.
Source: OECD Health Statistics 2022 and Eurostat database.

StatLink https://stat.link/8a5eit

Safe prescribing in primary care

The overuse, underuse or misuse of prescription medicines causes significant hazards to health and leads to wasteful care. These risks apply notably to the misuse of antibiotics, opioids and benzodiazepines in primary care.

Antibiotics should be prescribed only where there is a need that is clearly supported by evidence, to reduce the risk of resistant strains of bacteria. For example, quinolones and cephalosporins are considered second-line antibiotics in most prescribing guidelines, and should be used only when first-line antibiotics are ineffective. Total volume of antibiotics and second-line antibiotics (as a proportion of total volume) have been validated as markers of quality, given the rising public health concern caused by antimicrobial resistance (AMR) across OECD countries (OECD, 2018[1]).

Total volume of antibiotics prescribed in primary care varied almost four-fold across EU countries in 2020, with Austria and the Netherlands reporting the lowest volumes, and Greece, Romania and Bulgaria reporting the highest. Volumes of second-line antibiotics vary almost 25-fold across countries: the Nordic countries except Finland reported the lowest volumes, whereas Greece and Bulgaria reported the highest (Figure 6.26). Cross-country variation in the use of antibiotics is likely to be explained by differences in prevalence of AMR, guidelines and incentives that govern primary care prescribers, and attitudes towards optimal treatment of infectious illness.

Opioids are often used to treat strong acute pain like pain associated with cancer. Over the last decade, they have been increasingly used to treat chronic pain, despite the risk of dependence, dose increase, shortness of breath and death (OECD, 2019[2]).

Across EU countries, the average volume of opioids prescribed in primary care in 2019 was 13 defined daily doses (DDDs) per 1 000 population per day. Iceland and Norway reported more than twice the EU average; Italy reported the lowest volumes (Figure 6.27). The wide variation can be partly explained by varying clinical practice and prescribing in pain management, regulation, and trends in substance abuse.

Most guidelines advise complete avoidance of benzodiazepines for older adults given the risk of dizziness, confusion and falls. Long-term use of benzodiazepines can lead to adverse events (overdoses), tolerance, dependence and dose escalation. Long-acting (as opposed to short-acting) benzodiazepines are also discouraged given a longer effect for the body to eliminate (OECD, 2017[3]).

Over the past decade, the use of benzodiazepines, both long-term and long-acting, decreased across EU countries (Figure 6.28). Large declines in long-term use have occurred in Iceland while Denmark and Iceland experienced a large decline in the use of long-acting benzodiazepines. Still, striking variations persist across countries. Long-term use of benzodiazepines in Iceland is 16-fold higher than that in Estonia. Conversely, the use of long-acting benzodiazepines in Estonia is highest in the EU and 23-fold higher than that in Finland. The wide variation is partly explained by reimbursement and prescribing policies for benzodiazepines, as well as differences in disease prevalence.

Definition and comparability

DDD is the assumed average maintenance dose per day for a drug used for its main indication in adults. DDDs do not necessarily reflect the average daily dose actually used in a given country. For more detail, see http://www.whocc.no/atcddd. Denominators comprise the population in the national prescribing database, rather than the general population.

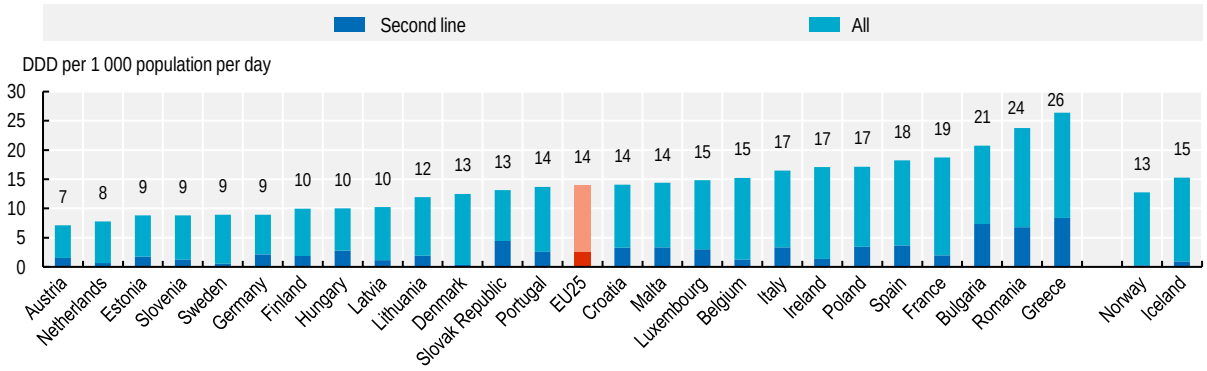
References

OECD (2019), *Addressing Problematic Opioid Use in OECD countries*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/a18286f0-en. [2]

OECD (2018), *Stemming the Superbug Tide: Just A Few Dollars More*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264307599-en. [1]

OECD (2017), *Tackling Wasteful Spending on Health*, OECD Publishing, Paris, https://doi.org/10.1787/9789264266414-en. [3]

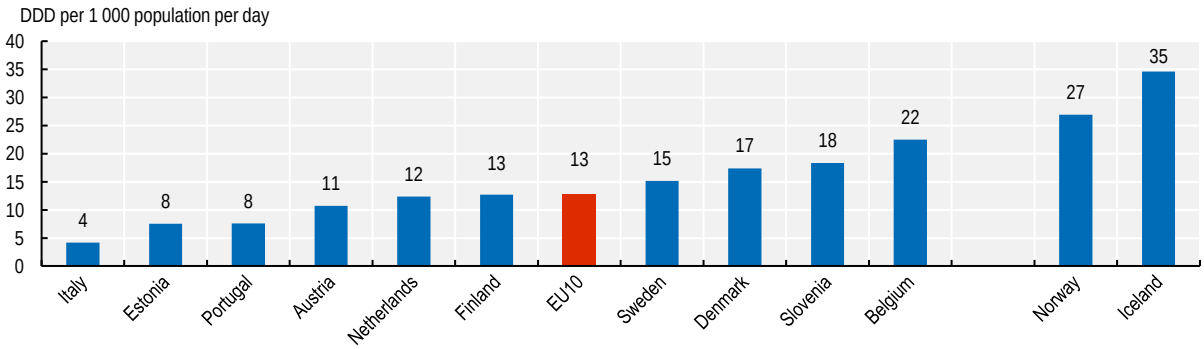
Figure 6.26. Overall volume of antibiotics prescribed, 2020



Note: The EU average is unweighted. Data only include antibiotics prescribed in primary care (outside hospital).
Source: European Centre for Disease Prevention and Control.

StatLink https://stat.link/3xs9k2

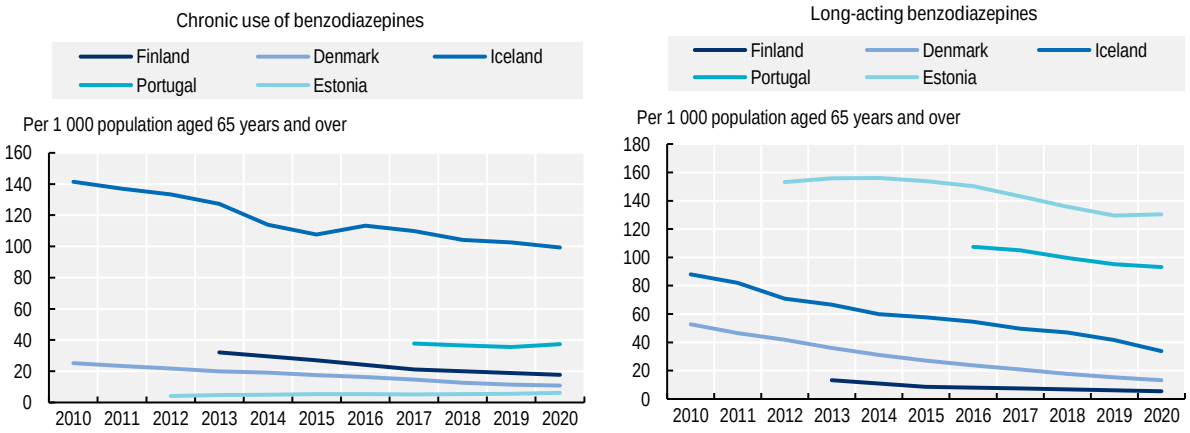
Figure 6.27. Overall volume of opioids prescribed in the adult population, 2019 (or nearest year)



Note: The EU average is unweighted. Adult population covers individuals aged 18 and over. Data exclude products used in the treatment of addiction.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/obnvgd

Figure 6.28. Trends in benzodiazepine use in adults aged 65 and over, 2009-20



Source: OECD Health Statistics 2022.

StatLink https://stat.link/2ysoch

Safe acute care: Workplace culture and patient experiences

Measures of patient safety culture from the perspective of health workers can be used – along with patient-reported experiences of safety, traditional patient safety indicators and health outcome indicators, to give a holistic perspective of the state of safety in health systems.

A positive patient safety culture for health workers results in shared perceptions of the importance of safety, increased transparency and trust, and higher levels of shared responsibility, along with improved confidence in organisational and national safety initiatives. A growing body of research has found that positive patient safety culture is associated with a number of benefits, including better health outcomes and patient experiences, as well as improved organisational productivity and staff satisfaction (de Bienassis et al., 2020[1]).

Figure 6.29 illustrates two domains of the Hospital Survey on Patient Safety Culture that was conducted before the pandemic. The safety of handoffs and transitions relates to staff perceptions of whether important patient care information is transferred across hospital units and during shift changes. On average across EU countries, 45% of the hospital staff surveyed thought that handoffs and transitions were sufficient. Figure 6.29 also shows that 51% of health workers had positive overall perceptions of patient safety – meaning that staff think the procedures and systems at their workplace are good at preventing errors and that there is a lack of patient safety problems.

Patient perspectives are also critical to make health systems safer and more people-centred. To strengthen health systems based on people's voices, a number of EU countries have started utilising patient-reported safety indicators systematically. For example, Poland uses them as part of its provider accreditation mechanism. According to the Commonwealth Fund 2020 survey, the proportion of people reporting experiences of medical mistakes in the past two years varied between 6% in France and 10% in Germany and Norway in 2020. Among hospitalised patients, the proportion was 5% in Latvia and 9% in Poland (Figure 6.30).

Among different types of patient safety incidents, medication-related errors are most frequently reported across countries. The proportion of people who reported wrong medication or wrong dosage given by a doctor, nurse, hospital or pharmacist in the past two years ranged from 5% in Germany and Switzerland to 8% in Norway in 2020 (Figure 6.31). These data need to be interpreted with caution as they may be underreported because patients may not know about all cases of medication error.

Definition and comparability

Health worker perceptions of patient safety are based on the assessment of workers in the hospital setting (including psychiatric hospitals) using the Hospital Survey of Patient Safety Culture (HSPSC). Due to infrequent national assessments of patient safety culture in many countries, Figure 6.29 includes data from the most recent representative survey between 2010-20.

Several differences in data reporting across countries may influence the calculated rates and they include differences in the number of survey respondents, types and number of participating hospitals, response rates and obligatory vs. voluntary reporting (de Bienassis and Klazinga, 2022[2]).

International comparisons of patient-reported data are challenging because they may be influenced by many factors, including phrasing of the questions and response categories, and the order of questions in the survey. Patient-reported data from the Commonwealth Fund survey were collected from a sample of population aged 18 and over, whereas national surveys based on the pilot instrument (OECD, 2019[3]) were collected from hospitalised patients aged 18 and over, so they are not directly comparable.

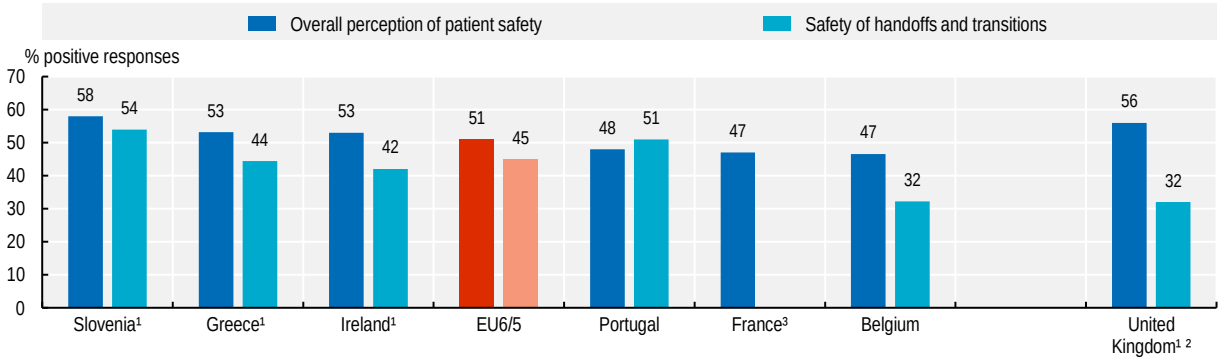
References

de Bienassis, K. and N. Klazinga (2022), "Developing international benchmarks of patient safety culture in hospital care: Findings of the OECD patient safety culture pilot data collection and considerations for future work", *OECD Health Working Papers*, No. 134, OECD Publishing, Paris, https://doi.org/10.1787/95ae65a3-en. [2]

de Bienassis, K. et al. (2020), "Culture as a cure: Assessments of patient safety culture in OECD countries", *OECD Health Working Papers*, No. 119, OECD Publishing, Paris, https://doi.org/10.1787/6ee1aeae-en. [1]

OECD (2019), *Patient-Reported Safety Indicators: Question Set and Data Collection Guidance*, OECD, Paris, https://www.oecd.org/health/health-systems/Patient-reported-incident-measures-December-2019.pdf. [3]

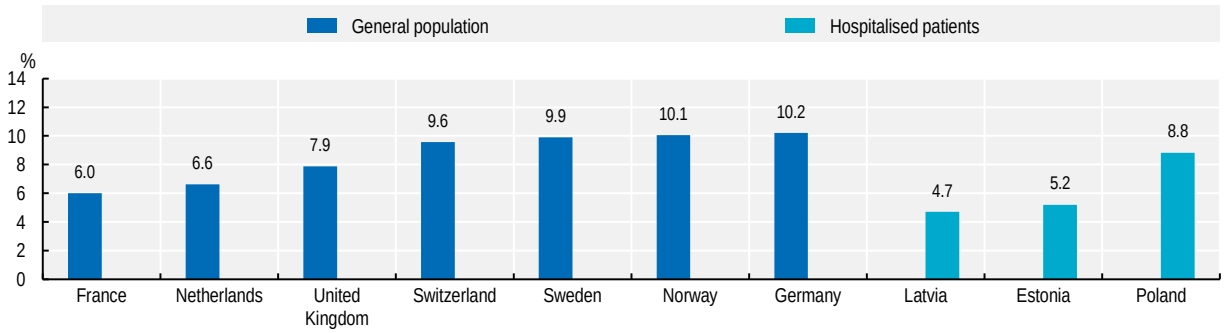
Figure 6.29. Health worker perceptions of patient safety, handoffs and transitions, latest available year



Note: The EU average is unweighted. 1. Data from 2010-15 (all other data are from 2015-20). 2. Data are for Scotland only. 3. Bourgogne Franche-Comté.
Source: OECD Pilot Data Collection on Patient Safety Culture, 2020-21.

StatLink https://stat.link/afyktw

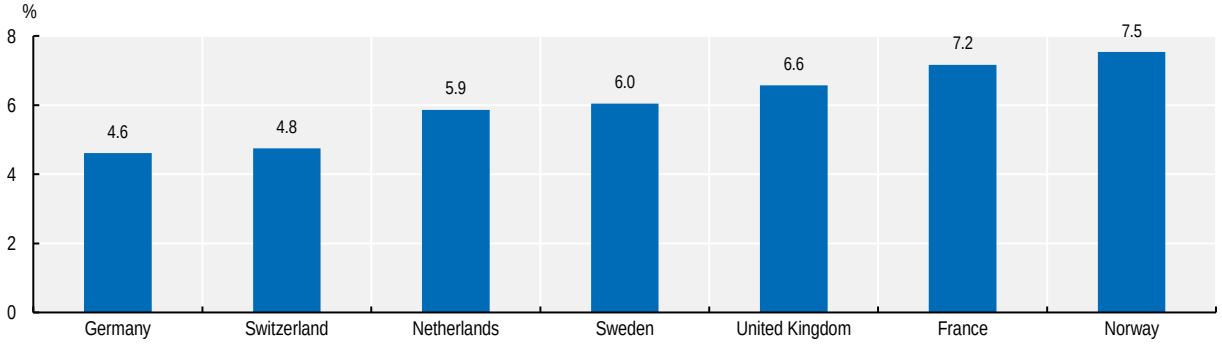
Figure 6.30. Patients reporting that a medical mistake was made during treatment or care, 2020 (or nearest year)



Note: Data for the general population are from the Commonwealth Fund 2020 International Health Policy Survey and data for hospitalised patients are from national sources.
Source: OECD Pilot Data collection on Patient-Reported Experience of Safety, 2020-21.

StatLink https://stat.link/cnihg5

Figure 6.31. Patients reporting that they experienced a medication-related mistake, 2020



Note: Data refer to the general population.
Source: The Commonwealth Fund 2020 International Health Policy Survey.

StatLink https://stat.link/yschv8

7 Accessibility: Affordability, availability and use of services

Most EU countries have achieved universal coverage for a core set of health services, although the range of services covered and the degree of cost-sharing vary. Universal health coverage has played an important role in mitigating the impact of the pandemic by ensuring that the entire population has access to COVID-19 test, vaccination and treatment. Nonetheless, effective access to different types of care can be restricted for different reasons, including costs, health workforce shortages, long waiting times or geographic barriers. During the pandemic, access to care was also restricted due to disruptions in non-urgent health services that have generated backlogs and increases in waiting times, particularly for elective surgery. The pandemic highlighted serious health workforce shortages in many EU countries, despite the fact that the number of doctors and nurses per population had increased over the past decade. Many EU countries have taken actions to increase the supply of doctors and nurses by increasing the number of students in medical and nursing programmes, although it will take several years for these new students to complete their training. Increasing the retention rates in health occupations will be key to avoid exacerbating shortages in the short term.

Unmet health care needs

Population coverage for health care

Extent of health care coverage

Financial hardship and out-of-pocket expenditure

Availability of doctors

Remuneration of doctors (general practitioners and specialists)

Availability of dentists and consultations with dentists

Availability of nurses

Remuneration of nurses

Use of diagnostic technologies

Hospital beds and discharges

Hip and knee replacements

Waiting times for elective surgery

Unmet health care needs

Accessibility to health care can be limited for a number of reasons, including cost, distance to the closest health facility and waiting times. The disruption of health services during the pandemic also resulted in unmet health care needs as resources were mobilised to address the crisis and people were encouraged to stay home to reduce virus transmission. Information about unmet health care needs can be sought by using different survey instruments that provide different results. The data presented here rely on the regular Eurostat EU Statistics on Income and Living Conditions (EU-SILC) survey and Eurofound's *Living, working and COVID-19 e-survey*.

Based on EU-SILC, most of the population in EU countries reported that they had no unmet medical care needs for financial reasons, geographic reasons or waiting times in 2020 (Figure 7.1). However, in Estonia, nearly 15% of the population reported some unmet medical care needs mainly due to long waiting times. Estonia is unique among EU countries in that people in the highest income group report greater unmet medical care needs than those in the lowest income group. In all other countries, the burden of unmet needs for health care fall mostly on people from low-income households. This is particularly the case in Greece where more than one in six people in the lowest income quintile (17%) reported going without some medical care when they needed it in 2020 compared with only 1% among the highest income quintile. Cost was the main reason for these unmet needs.

In most countries, a larger proportion of the population indicates some unmet needs for dental care than for medical care (Figure 7.2). This is mainly because dental care is only partially included (or not included at all) in public schemes in many countries, so it must either be paid out-of-pocket or covered through purchasing private health insurance. More than 7% of people in Latvia, Portugal and Greece reported unmet needs for dental care in 2020, mainly for financial reasons.

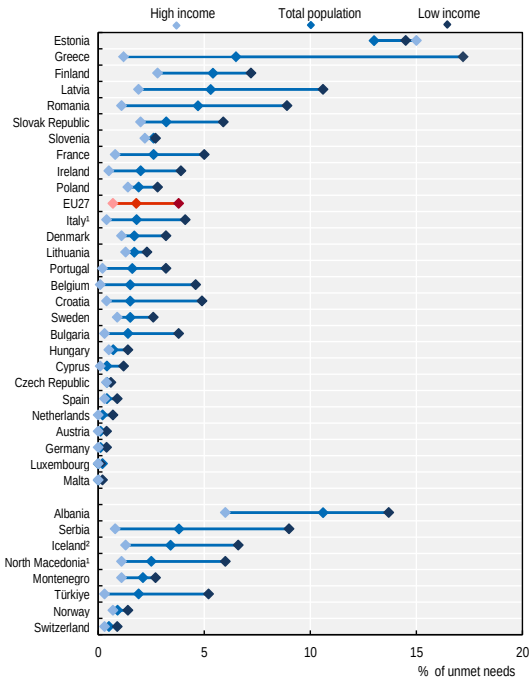
The pandemic put great pressure on Europe's health systems, and many health services were disrupted in the initial phase and during pandemic peaks. Eurofound's COVID-19 e-survey provides evidence of the substantial impact that COVID-19 had on unmet care needs at different points in the pandemic. In spring 2022, nearly a fifth of respondents (18%) reported having a medical issue for which they had not yet received examination or treatment. On average, unmet medical care needs remained as high in spring 2022 as in spring 2021 (Figure 7.3). Latvia, Poland and Lithuania are the three countries where people reported the highest unmet needs in spring 2022 Figure 7.3.

Definition and comparability

EU-SILC asks people whether there was a time in the previous 12 months when they felt they needed medical care or dental care but did not receive it, followed by a question as to why the need for care was unmet. The data presented here focus on three reasons: the care was too expensive, the distance to travel too far or waiting times too long. Some variations in the survey question across countries may affect data comparability: while most countries refer to both a medical examination or treatment, in some countries (e.g. Czech Republic and Spain) the question only refers to a medical examination/ consultation, resulting in lower rates of unmet needs. The question in Germany refers to unmet needs for "severe" illnesses, also resulting in some under-estimation compared with other countries. Income groups are divided by quintile: the first quintile represents the 20% of the population with the lowest income, and the fifth quintile the 20% with the highest income.

Data on unmet health care needs from Eurofound's COVID-19 e-survey relate to whether people reported any current unmet needs for medical examination or treatment at the time when the survey was conducted.

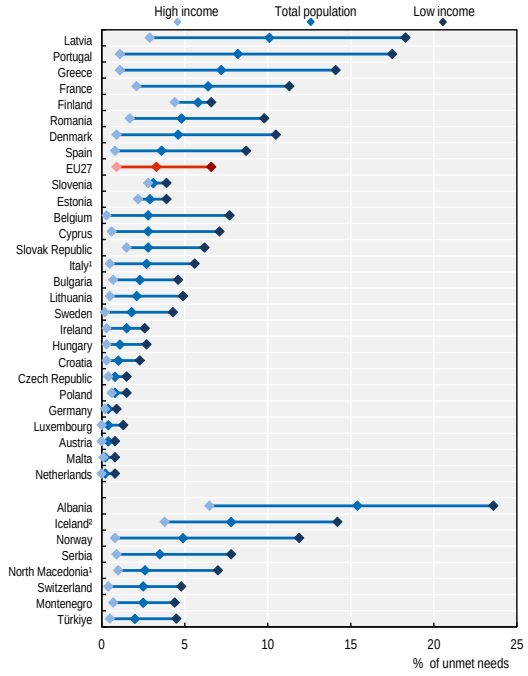
Figure 7.1. Unmet needs for medical examination due to financial, geographic or waiting time reasons, 2020



Note: The EU average is weighted.
1. Data from 2019. 2. Data from 2018.
Source: Eurostat Database, based on EU-SILC.

StatLink https://stat.link/63hqkl

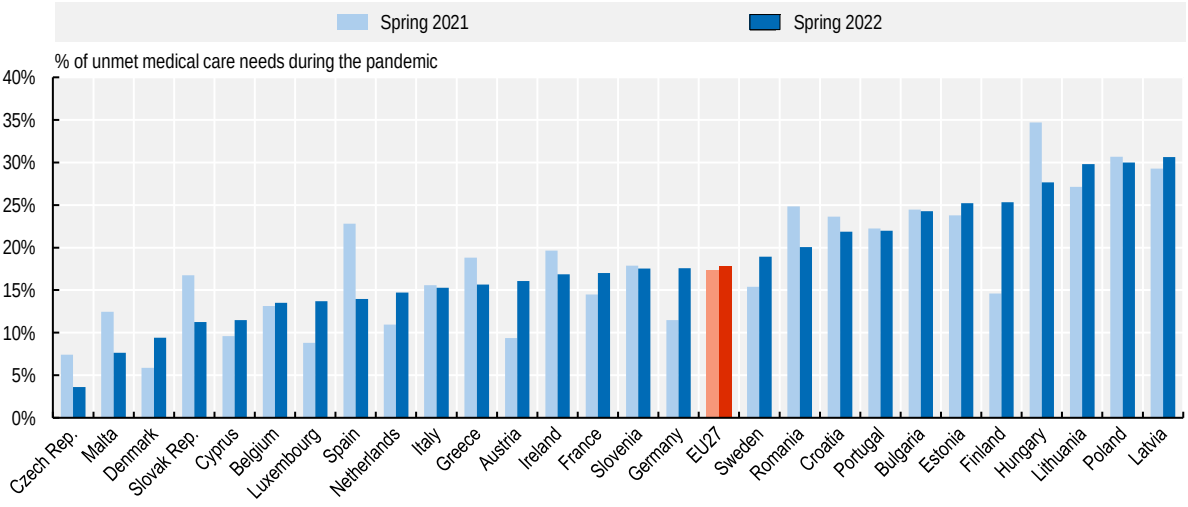
Figure 7.2. Unmet needs for dental examination due to financial, geographic or waiting time reasons, 2020



Note: The EU average is weighted.
1. Data from 2019. 2. Data from 2018.
Source: Eurostat Database, based on EU-SILC.

StatLink https://stat.link/5k7zg0

Figure 7.3. Unmet medical care needs during the pandemic, 2021 and 2022



Note: The survey question refers to current unmet needs at the time of the survey. The EU average is weighted.
Source: Eurofound's *Living, working and COVID-19 e-survey* (spring 2021 and spring 2022).

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Population coverage for health care

The share of the population covered by a public or private scheme provides an important measure of access to care and the financial protection against the costs associated with health care. The COVID-19 pandemic demonstrated the importance of universal health coverage as a key element for the resilience of health systems, as gaps in insurance coverage and high levels of out-of-pocket payments may deter people from seeking care, and thus contribute to virus transmission. Higher population coverage through public and primary private health insurance have been associated with lower COVID-19 death and lower excess mortality in EU and other OECD countries (OECD, forthcoming[1]).

However, population coverage is only a partial measure of access and coverage: the range of services covered and the degree of cost-sharing for those services also define how comprehensive health care coverage is in a country (see indicator "Extent of health care coverage").

Most European countries have achieved universal (or near-universal) coverage of health care costs for a core set of services, usually including consultations with doctors, tests and examinations, and hospital care (Figure 7.4). Yet, in some countries, coverage of these core services may not be universal. In Ireland, for example, only Medical Card and GP Card holders (less than 50% of the population) were covered for the costs of all GP services in 2020. However, since the beginning of the pandemic in March 2020, some GP services such as remote COVID-19 consultations are provided free of charge for all the population.

Two EU countries (Bulgaria and Romania) still had at least 10% of their population not covered for health care costs in recent years. In both countries, the main groups of uninsured people are those living abroad but still counted as residents; long-term unemployed people; those who chose not to pay health insurance premiums; and people without a valid identity card which is a prerequisite for health insurance registration. This last issue particularly affects the Roma population and undocumented migrants (OECD/European Observatory on Health Systems and Policies, 2021[2]; 2021[3]). In general, people without insurance nonetheless have free access to some services, like care in emergency departments or care during pregnancy, but need to cover all other costs out of pocket.

Although basic primary health coverage generally covers a defined set of benefits, in many countries accessing health services entails some degree of cost-sharing for the majority of users. In most countries, additional health coverage can be purchased through private insurance to cover any cost-sharing left after basic coverage (complementary insurance), add additional services (supplementary insurance) or provide faster access or larger choice of providers (duplicate insurance). In most EU countries, only a small proportion of the population has an additional private health insurance, with the exception of Belgium, France, Slovenia, the Netherlands and Luxembourg, where more than half of the population has private insurance coverage (Figure 7.5).

Definition and comparability

Population coverage for health care is defined as the share of the population covered for a set of health care goods and services (covering at least hospital care and outpatient medical care) under public programmes and through private health insurance. Public coverage refers both to government programmes, generally financed by taxation, and social health insurance, generally financed by payroll taxes.

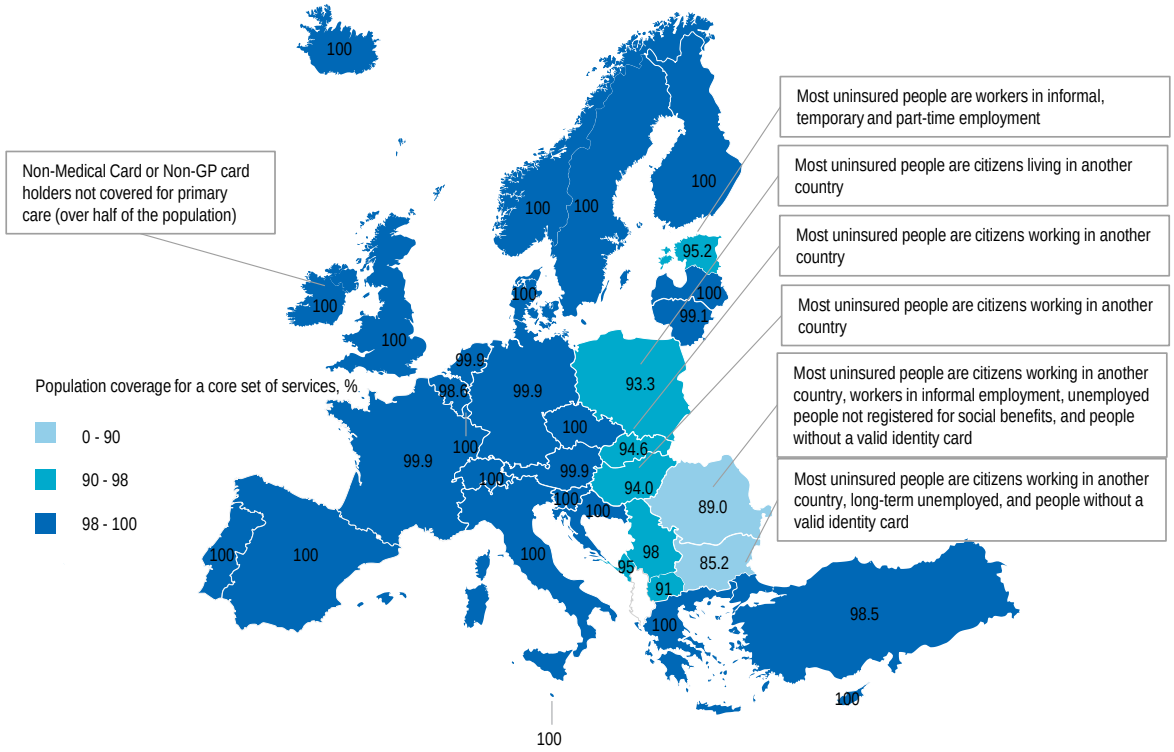
References

OECD (forthcoming), *Ready for the Next Crisis? Investing in Resilient Health Systems*, OECD Health Policy Studies, OECD Publishing, Paris. [1]

OECD/European Observatory on Health Systems and Policies (2021), *Bulgaria: Country Health Profile 2021*, State of Health in the EU, OECD Publishing, Paris, https://doi.org/10.1787/c1a721b0-en. [2]

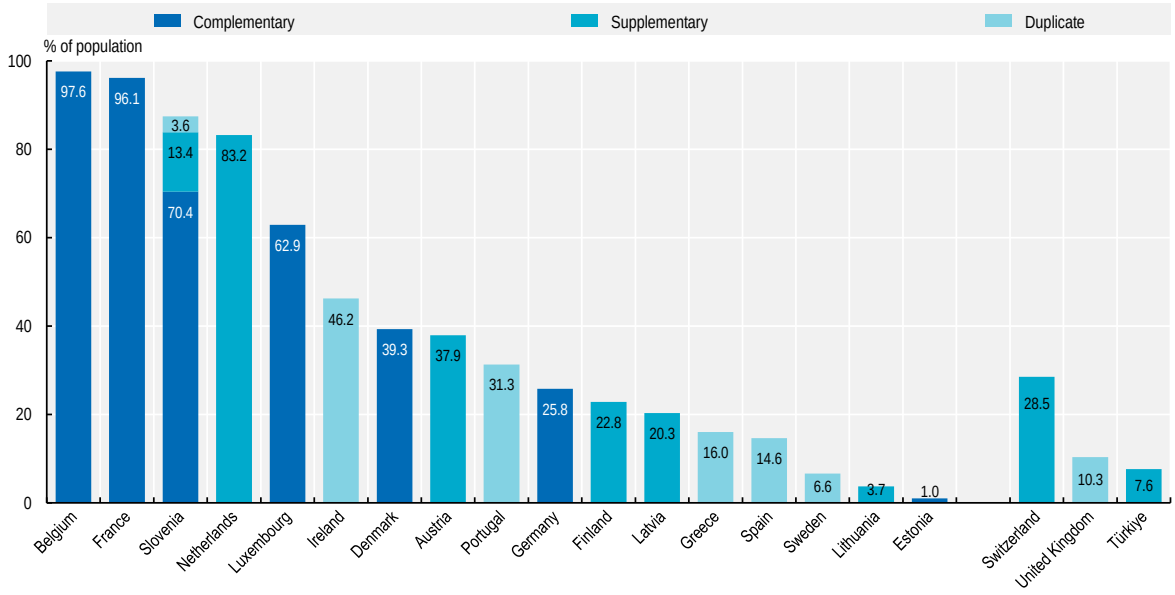
OECD/European Observatory on Health Systems and Policies (2021), *Romania: Country Health Profile 2021*, State of Health in the EU, OECD Publishing, Paris, https://doi.org/10.1787/74ad9999-en. [3]

Figure 7.4. Population coverage for a core set of services, 2020 (or nearest year)



Note: Data include public coverage and primary voluntary health insurance coverage.
Source: OECD Health Statistics 2022; European Observatory Health Systems in Transition (HiT) Series for non-OECD countries.

Figure 7.5. Private health insurance coverage, 2020 (or nearest year)



Note: These data exclude primary voluntary health insurance (VHI). VHI can be both complementary and supplementary in Denmark, Germany, Luxembourg and Türkiye.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/j1qpt0

Extent of health care coverage

In addition to the share of the population entitled to core health services, the extent of health care coverage is defined by the range of services included in a publicly-defined benefit package and the proportion of costs covered. Figure 7.6 assesses the extent of coverage for key health care goods and services, by computing the share of expenditure covered under government schemes or compulsory health insurance. Differences across countries in the extent of coverage can be the result of specific goods and services being included or excluded in the publicly-defined benefit package, different cost-sharing arrangements or some services only being covered for specific population groups in a country.

Across EU countries, more than three-quarters of all health care costs were covered by government or compulsory health insurance schemes in 2020 (see indicator "Financing of health expenditure" in Chapter 5), but financial protection is not uniform across all types of health care services, and the variation across countries is considerable. In nearly all EU countries, inpatient services in hospitals are more comprehensively covered than any other type of care. Across the EU, 91% of all inpatient costs were borne by government or compulsory insurance schemes in 2020. In many countries, access to acute inpatient care is free or subject to very limited cost-sharing. As a result, coverage rates were near 100% in Sweden, Estonia, Romania, the Czech Republic, Germany and France. In Greece on the other hand, financial coverage for the cost of inpatient care was only around two-thirds of total costs.

More than three-quarters (78%) of spending on outpatient medical care across the EU was borne by government and compulsory insurance schemes in 2020. Coverage ranged from less than 60% in Malta, Bulgaria and Latvia to over 90% in the Slovak Republic, Denmark, the Czech Republic and Sweden. In some countries, outpatient primary and specialist care are generally free at the point of service, but some out-of-pocket payments may still apply for specific services or if patients consult non-contracted private providers.

Public coverage for dental care costs is far more limited across EU countries due to restricted service packages (frequently limited to children) and high levels of cost-sharing. On average, only one-third of total costs are borne by government schemes or compulsory insurance. More than 60% of dental spending is covered in only two EU countries (Germany and France). In Cyprus, Greece, Romania and Spain, the level of compulsory coverage is very low. Voluntary health insurance may play an important role in providing financial protection when dental care is not comprehensively covered in the benefit package – this is the case for adults in the Netherlands, for example.

Coverage for pharmaceuticals is also typically less comprehensive than for inpatient and outpatient care. Across the EU, around 59% of pharmaceutical costs are financed by government or compulsory insurance schemes. The most generous coverage can be found in Cyprus, Germany, France and Ireland (above 80%). On the other hand, this share is less than 40% in Bulgaria and Poland.

Finally, therapeutic appliances such as glasses and other eye products, hearing aids and other medical devices are typically covered to a lesser extent than other health care goods and services, with the exception of dental care. Government and compulsory insurance schemes cover more than 50% of these expenses in only four EU countries.

Definition and comparability

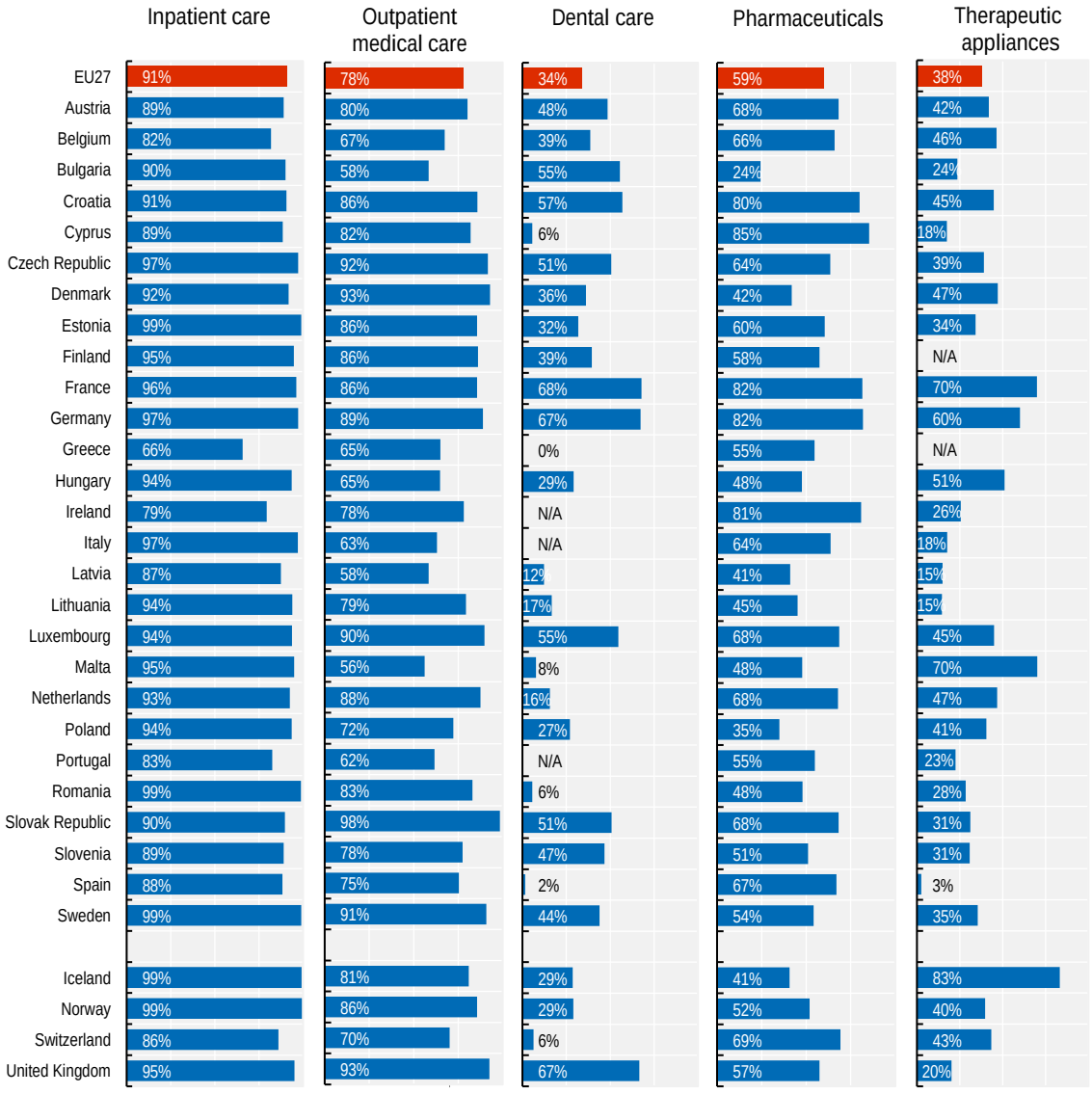
Health care coverage is defined by the share of the population entitled to services, the range of services included in a benefit package and the proportion of costs covered by government schemes and compulsory insurance schemes. Coverage provided by voluntary health insurance and other voluntary schemes such as charities or employers is not considered. The core functions analysed here are based on definitions in the *System of Health Accounts 2011* (OECD/Eurostat/WHO, 2017[1]).

References

OECD/Eurostat/WHO (2017), *A System of Health Accounts 2011: Revised edition*, OECD Publishing, Paris, https://doi.org/10.1787/9789264270985-en. [1]

Figure 7.6. Health care coverage for selected goods and services, 2020 (or nearest year)

Government and compulsory insurance spending as proportion of total health spending by type of service



Note: Outpatient medical services mainly refer to services provided by generalists and specialists in the outpatient sector. Pharmaceuticals include prescribed and over-the-counter medicines as well as medical non-durables. Therapeutic appliances refer to vision products, hearing aids, wheelchairs and other medical devices. N/A means data not available. The EU average is unweighted.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/rit7h6

Financial hardship and out-of-pocket expenditure

Where health systems fail to provide adequate financial protection, people may suffer financial hardship from paying for health care, or they simply forgo health care altogether because they cannot afford it. As a result, lack of financial protection can reduce access to health care, undermine health status, deepen poverty and exacerbate health and socio-economic inequalities. On average across the EU, around 15% of all spending on health care comes directly from patients through out-of-pocket (OOP) payments. People experience financial hardship when the burden of OOP payments is large in relation to their ability to pay. Poorer households and those who have to pay for long-term treatment are particularly vulnerable.

The share of household consumption spent on health care provides an aggregate assessment of the financial burden of OOP expenditure. In 2020, around 3% of total household spending was on health care goods and services across the EU, ranging from less than 2% in Croatia, Luxembourg and Cyprus to more than 7% in Malta (Figure 7.7).

Health systems in EU countries differ in the degree of coverage for different health goods and services. Pharmaceuticals and other medical goods made up the main OOP expense for people in 2020, followed by spending on outpatient care (Figure 7.8). These two components typically account for two-thirds of household spending on health care.

The indicator most widely used to measure financial hardship associated with OOP payments for households is the incidence of catastrophic spending on health (Cylus, Thomson and Evetovits, 2018[1]). This varies considerably across EU countries, from fewer than 2% of households experiencing catastrophic health spending in Sweden, Spain, Ireland and Slovenia, to 15% of households or more in Latvia, Lithuania and Bulgaria (Figure 7.9). Across all countries, poorer households (those in the lowest consumption quintile) are most likely to experience catastrophic health spending.

Countries with comparatively high levels of public spending on health and low levels of OOP payments typically have a lower incidence of catastrophic spending. However, policy choices are also important, particularly around coverage policy (WHO Europe, 2019[2]). Population entitlement to publicly financed health care is a prerequisite for financial protection, but not a guarantee of it. Countries with a low incidence of catastrophic spending on health are also more likely to limit the use of co-payments; exempt poor people and frequent users of care from co-payments; use low fixed co-payments instead of percentage co-payments; and cap the co-payments a household has to pay over a given time period (as, for example, in Austria, Germany, Ireland, Spain and the United Kingdom).

Definition and comparability

Out-of-pocket (OOP) payments are expenditures borne directly by a person at the time of using any health good or service. They include cost-sharing (co-payments) and other expenditure paid directly by private households.

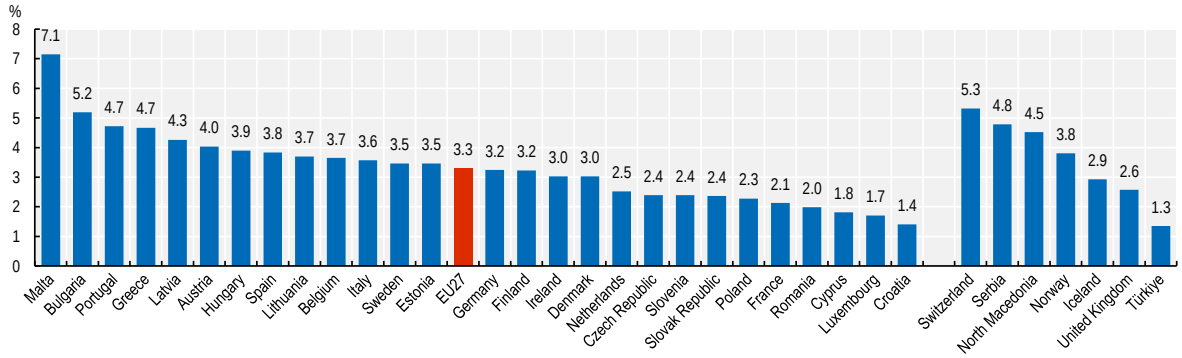
Catastrophic health spending is defined as OOP payments that exceed a predefined percentage of the resources available to a household to pay for health care. Household resources available can be defined in different ways, leading to measurement differences. In the data presented here, these resources are defined as household consumption minus a standard amount representing basic spending on food, housing and utilities. The threshold used to define households with catastrophic spending is 40% of household capacity to pay for health care. Results are disaggregated into quintiles by consumption per person using the OECD equivalence scale. Microdata from national household budget surveys are used to calculate this indicator.

References

Cylus, S. Thomson and T. Evetovits (2018), “Catastrophic health spending in Europe: equity and policy implications of different calculation methods”, *Bulletin of the World Helath Organization*, Vol. 96/9, https://doi.org/10.2471/BLT.18.209031. [1]

WHO Europe (2019), *Can people afford to pay for health care? New evidence on financial protection in Europe*, WHO Regional Office Europe, Copenhagen, https://apps.who.int/iris/handle/10665/332516. [2]

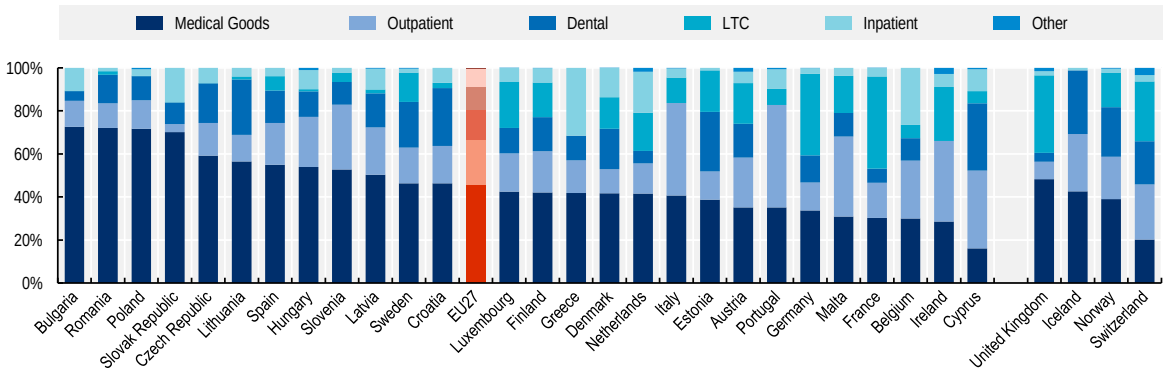
Figure 7.7. Out-of-pocket spending on health as share of final household consumption, 2020 (or nearest year)



Note: The EU average is unweighted.
Source: OECD Health Statistics 2022, OECD National Accounts database.

StatLink https://stat.link/4g9vhd

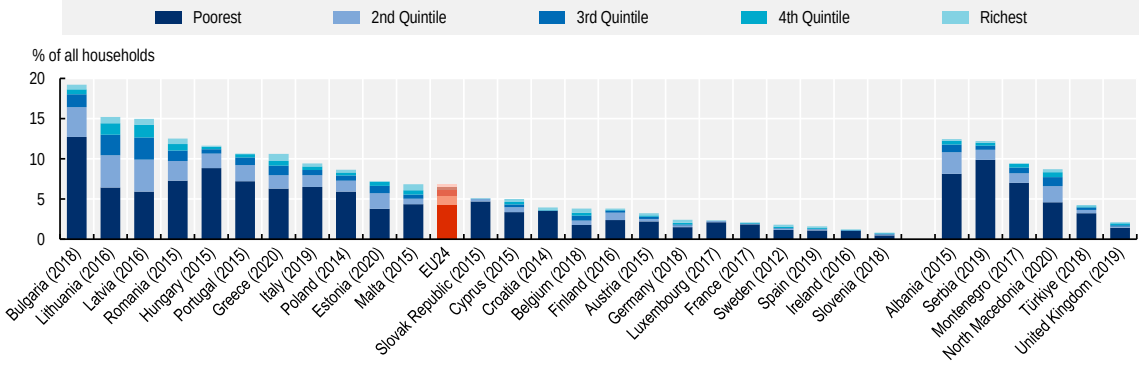
Figure 7.8. Out-of-pocket spending on health, by type of services, 2020 (or nearest year)



Note: The EU average is unweighted. "Medical Goods" include retail pharmaceuticals and therapeutic appliances.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/t3bc7f

Figure 7.9. Share of households with catastrophic health spending by consumption quintile, latest year



Note: The EU average is unweighted.
Source: WHO Regional Office for Europe, 2019 and updates from the WHO Barcelona Office for Health Systems Financing.

StatLink https://stat.link/kwa7g1

Availability of doctors

Proper access to medical care requires having a sufficient number of doctors, with a proper mix of generalists and specialists, and a proper geographic distribution to serve the population in the whole country.

The number of doctors in EU countries increased from about 1.5 million in 2010 to 1.8 million in 2020. In all EU countries, the number of doctors increased more rapidly than population size over the past decade, so that, on average, the number of doctors rose from 3.4 per 1 000 population in 2010 to 4.0 in 2020.

In 2020, Greece had the highest number of doctors (6.2 per 1 000 population), followed by Portugal (4.5 per 1 000 population), but the number in these two countries is an over-estimation as it includes all doctors licensed to practice (including retired physicians and those who might have emigrated to other countries but have kept their licence in the country). The number of doctors per capita was lowest in Luxembourg, Hungary, France and Belgium (3 or slightly more than 3 per 1 000 population), although the number in France and Belgium is an under-estimation as it does not include physicians-in-training. While the number of doctors per population has increased in all EU countries, the rise in Luxembourg, Hungary, France, Belgium, Italy, Estonia and Latvia has been very marginal (Figure 7.10).

In many countries, the main concern has been about growing shortages of general practitioners (GPs), particularly in rural and other under-served areas. Whereas the overall number of doctors per capita has increased in all countries, the share of GPs has come down in most countries. On average across EU countries, only one in five doctors were GPs in 2020 (Figure 7.11). A few countries, such as Portugal, Belgium, Luxembourg and France, have been able to maintain a better balance between GPs and specialists. Several countries have increased the number of postgraduate training places in general medicine to address GP shortages. For example, in France, at least 40% of all new postgraduate training places have been allocated to general medicine since 2017, a greater proportion than in most other EU countries. However, in France as in other countries, attracting a sufficient number of medical students to fill the available places in general medicine remains a challenge because of the lower remuneration and prestige of general practice.

In all countries, the density of physicians is generally greater in urban areas than in rural areas, reflecting the concentration of specialised services such as surgery in urban centres and physicians' preferences to live and practice in cities. Differences in the density of doctors between urban and rural areas are particularly large in Hungary, the Slovak Republic, Lithuania and Latvia (OECD, 2021[1]).

Following the pandemic, many countries have increased the number of medical students to address current or expected future shortages of doctors, although the effect of these decisions will only be felt in a few years' time as it takes 8-12 years to train new doctors. Some countries have also increased the recruitment of doctors from other countries as a quicker way to address current shortages, but this can raise issues about "brain drain" when the recruitment is from lower-income countries that are confronted with even greater shortages of doctors.

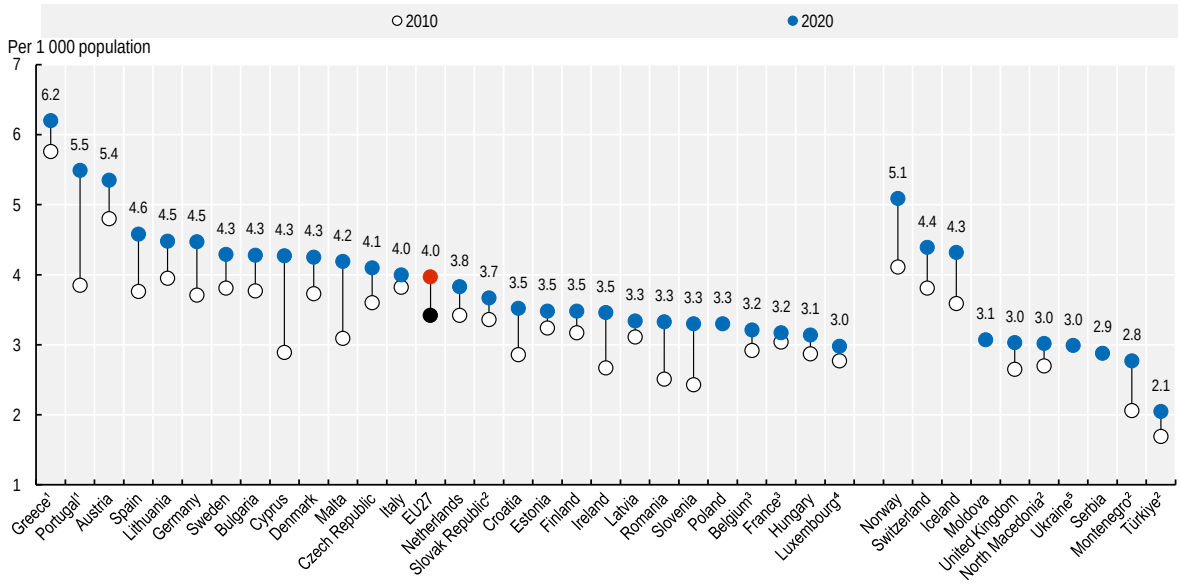
Definition and comparability

Practising physicians are defined as doctors who are providing care for patients. In some countries, the numbers also include doctors working in administration, management, academic and research positions ("professionally active" physicians), adding another 5-10% of doctors. Greece and Portugal report all physicians entitled to practice, resulting in an even greater overestimation. Interns and resident physicians who provide services under the supervision of other doctors are included in most countries, but not in Belgium and France.

References

OECD (2021), *Health at a Glance: OECD Indicators*, OECD Publishing, Paris, https://doi.org/10.1787/19991312. [1]

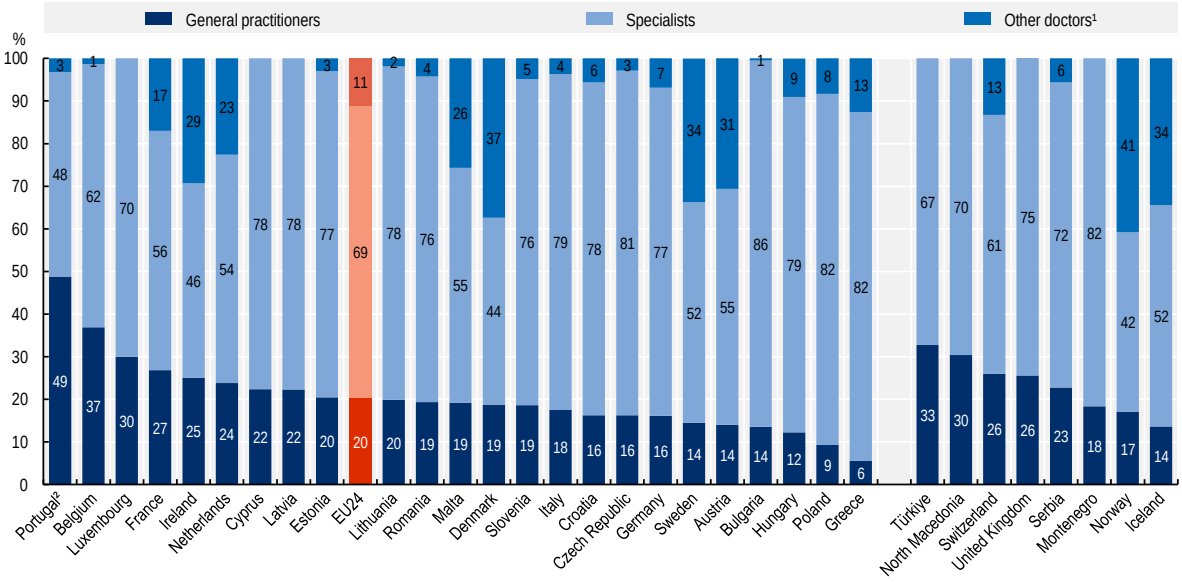
Figure 7.10. Practising doctors per 1 000 population, 2010 and 2020 (or nearest year)



Note: The EU average is unweighted. 1. Data refer to all doctors licensed to practice, resulting in a large over-estimation of the number of practising doctors (e.g. of around 30% in Portugal). 2. Data include not only doctors providing direct care to patients, but also those working in the health sector as managers, educators, researchers, etc. (adding another 5-10% of doctors). 3. Medical interns and residents are not included. 4. The latest data refer to 2017 only. 5. The latest data refer to 2014 only.
Source: OECD Health Statistics 2022; Eurostat Database; WHO National Health Workforce Accounts for Moldova and Ukraine.

StatLink https://stat.link/ejrwy5

Figure 7.11. Share of different categories of doctors, 2020 (or nearest year)



Note: The EU average is unweighted. 1. The category "Other doctors" includes non-specialist doctors working in hospital, recent medical graduates who have not yet started post-graduate specialty training, as well as any other doctors not further defined. 2. In Portugal, only about 30% of doctors employed by the public sector work as GPs in primary care – the other 70% work in hospitals.
Source: OECD Health Statistics 2022; Eurostat Database.

StatLink https://stat.link/10cs65

Remuneration of doctors (general practitioners and specialists)

The remuneration of various categories of doctors affects the financial attractiveness of general practice and different specialties. Differences in remuneration levels of doctors across countries can also act as a “push” or “pull” factor when it comes to physician migration. In many countries, governments can determine or influence the level and structure of physician remuneration by regulating their fees or by setting salaries when doctors are employed in the public sector.

In all European countries, the remuneration of doctors (both GPs and specialists) is substantially higher than the average wage of all workers. In most countries, GPs earned two to four times more than the average wage in each country in 2020, while specialists earned two to five times more (Figure 7.12).

In most countries, specialists earned more than GPs, but the gap varies. In Belgium, self-employed specialists earned at least twice as much as self-employed GPs in 2020. In Germany, the difference between specialists and GPs is much smaller (about 20%).

In most countries, the remuneration of doctors has increased in real terms (adjusted for inflation) since 2010, but at different rates across countries and between GPs and specialists (Figure 7.13). The increase among both specialists and generalists has been particularly strong in Hungary. The Hungarian Government increased substantially the remuneration of specialists and generalists over the past decade to reduce the emigration of doctors and shortages.

In some countries, like Portugal, Slovenia and the United Kingdom, the remuneration of both GPs and specialists fell in real terms between 2010 and 2020. In Portugal, the reduction occurred between 2010 and 2012: since then, the remuneration of doctors has increased, but remained lower in 2020 than in 2010 in real terms. In the United Kingdom, the remuneration of doctors fell in real terms over the past decade as was also the case for nurses and other NHS staff (The Health Foundation, 2021[1]).

In several countries, the remuneration of specialists has gone up faster than that of generalists since 2010, thereby increasing the remuneration gap. However, in Austria, Belgium and the Netherlands, the gap has narrowed slightly, as the income of GPs grew more than that of specialists.

Definition and comparability

The remuneration of doctors refers to average gross annual income and normally excludes practice expenses for self-employed doctors (except in Belgium where practice expenses are included). A distinction is made between salaried and self-employed doctors, although in some countries this distinction is blurred as some salaried doctors are allowed to have a private practice and some self-employed doctors receive part of their remuneration through salaries. The OECD data also distinguish between GPs and all other specialists combined, although there can be wide differences in the income of different medical and surgical specialists.

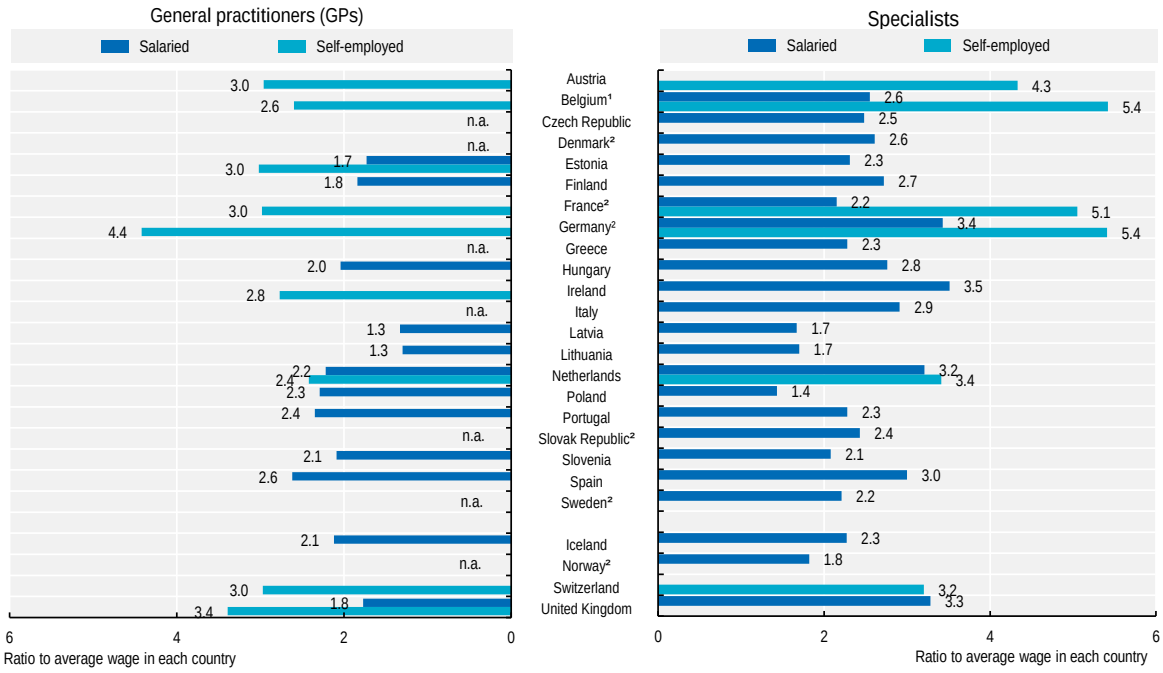
A number of data limitations result in an underestimation of remuneration in some countries: 1) payments for overtime work, bonuses and other supplementary income are excluded in some countries (in Austria for GPs, and in Ireland and Italy for salaried specialists); 2) incomes from private practices for salaried doctors are not included in several countries (e.g. Czech Republic, Hungary, Iceland, Ireland and Slovenia); 3) data in several countries relate only to public sector employees who tend to earn less than those working in the private sector (Denmark, Greece, Hungary, Iceland, Ireland, Norway, the Slovak Republic and the United Kingdom); and 4) informal payments, which may be common in certain countries, are not included.

The income of doctors is compared to the average wage of full-time employees in all sectors in the country.

References

The Health Foundation (2021), *How has NHS staff pay changed over the past decade?*, The Health Foundation, London, https://www.health.org.uk/news-and-comment/charts-and-infographics/how-has-nhs-staff-pay-changed-over-the-past-decade. [1]

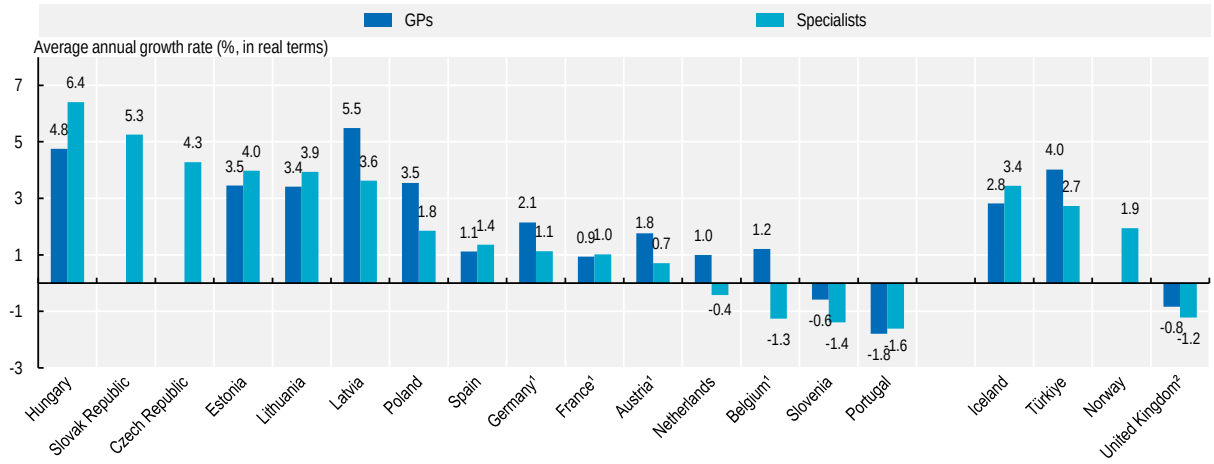
Figure 7.12. Remuneration of doctors, ratio to average wage, 2020 (or nearest year)



1. Practice expenses of self-employed GPs and specialists are included (resulting in an over-estimation). 2. Data for both salaried GPs and specialists are reported under salaried specialists as it is not possible to separate these two groups of doctors.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/0v1fwj

Figure 7.13. Trends in remuneration of GPs and specialists (in real terms), 2010-20 (or nearest years)



1. The growth rate is for self-employed GPs and specialists. 2. Data only include England.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/wt6u48

Availability of dentists and consultations with dentists

Dental health is an integral part of general health and quality of life. Access to dental care was often disrupted during the pandemic, with over one-fourth of people in the EU reporting unmet needs for dental care in spring 2021 and spring 2022 (Eurofound, 2022[1]).

Dentists play a key role in both preventing and treating oral health problems. In 2020, there were between 0.4 and 1.3 dentists per 1 000 population across EU countries (Figure 7.14.). Greece, Cyprus, Portugal, Lithuania and Bulgaria had the highest numbers of dentists per capita, although the numbers in Greece and Portugal are over-estimated as they include all dentists licensed to practice.

Between 2010 and 2020, the number of dentists per capita increased or remained stable in most EU countries, except in Greece, Sweden and Denmark where it decreased at least slightly. The number of dentists per capita rose particularly strongly in Portugal, Lithuania, Romania and Spain (Figure 7.14.).

While there is no general consensus about how often people should visit a dentist, the recommendation in several countries is that children should have a visit at least once a year to prevent and treat any problem quickly, while adults without problems may wait as long as two years. On average across EU countries, people had 1.3 consultations with a dentist in 2019, but this number dropped by 15% during the first year of the pandemic in 2020. The drop was particularly marked in the Netherlands (which nonetheless still had a relatively high number of dentist consultations during the pandemic), Spain and Hungary (Figure 7.15).

The higher number of consultations in the Netherlands before and during the pandemic can be explained by the strong preference of people for regular dental check-ups arising from well-established programmes to promote prevention of oral health issues at a young age. The National Dutch programme “Keep your Mouth Healthy” provides oral health education to children and is considered one of the best practices in Europe. Several other European countries have similar programmes of oral health promotion and prevention among children and adolescents.

The extent of public coverage for dental care costs can also partly explain some of the cross-country variations in the number of dentist consultations (see indicator “Extent of health care coverage”). In Romania for example, only 6% of dental care spending is publicly funded. By contrast, in France and Germany, more than 60% of dental spending is publicly covered. In the Netherlands, while dental care is not comprehensively covered in the benefit package for adults, voluntary health insurance plays an important role in covering dental costs.

Definition and comparability

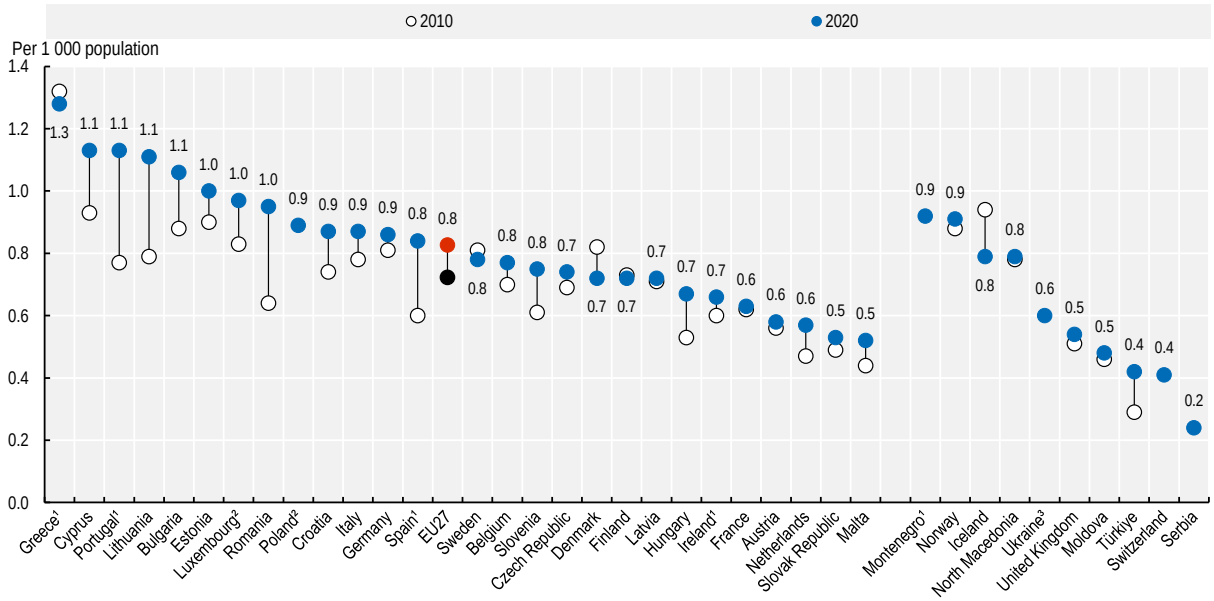
Data include both salaried and self-employed dentists. In most countries, the data only include dentists providing services to patients, but this is not the case in Greece, Ireland, Montenegro, Portugal and Spain where the data refer to all dentists licensed to practice, resulting in an over-estimation.

Dentist consultations include visits at the dentist’s office as well as in outpatient departments in hospital, although the coverage of these settings may differ across countries. The data come mainly from administrative sources, although in some countries (Ireland, the Netherlands, Spain and Switzerland) the data come from health interview surveys. Data from administrative sources tend to be higher than those from surveys because of recall problems and non-response rates and because some surveys only cover adults, resulting in an under-estimation if the number of visits among children is greater. Austria, Hungary, Serbia and the United Kingdom do not cover consultations privately financed or provided in the private sector, also resulting in an under-estimation.

References

Eurofound (2022), “Fifth round of the Living, working and COVID-19 e-survey: Living in a new era of uncertainty”, https://www.eurofound.europa.eu/publications/report/2022/fifth-round-of-the-living-working-and-covid-19-e-survey-living-in-a-new-era-of-uncertainty#tab-01. [1]

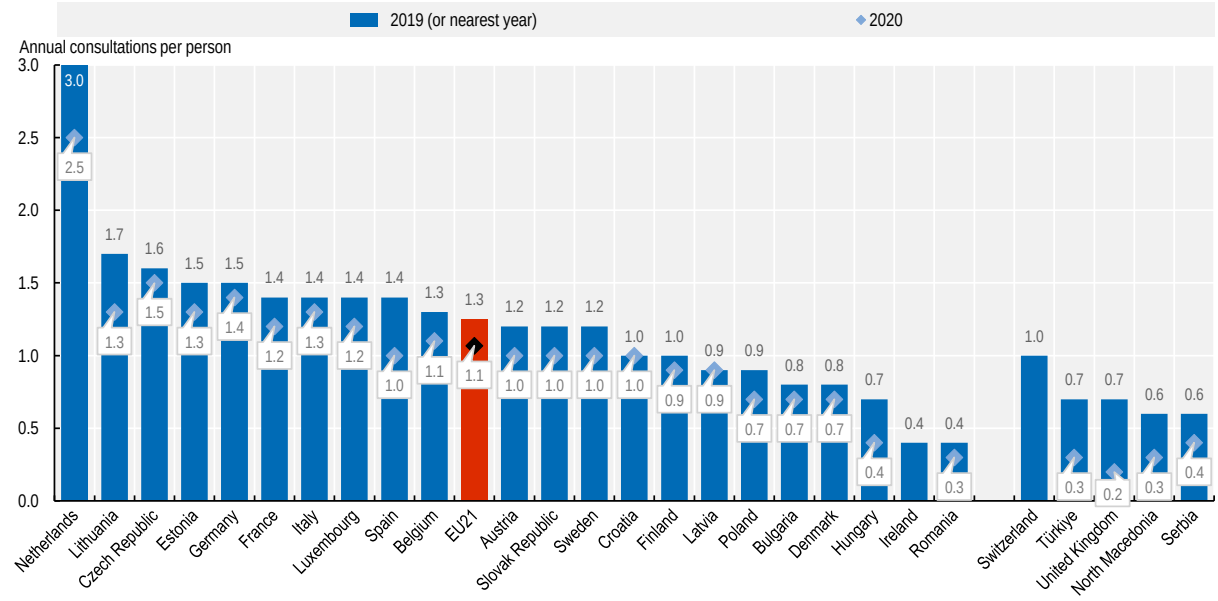
Figure 7.14. Practising dentists per 1 000 population, 2010 and 2020 (or nearest year)



Note: The EU average is unweighted. 1. Data refer to all dentists licensed to practice, resulting in an over-estimation of practising dentists. 2. The latest data refer to 2017 only. 3. The latest data refer to 2014 only.
Source: OECD Health Statistics 2022; Eurostat Database; WHO National Health Workforce Accounts for Moldova and Ukraine.

StatLink https://stat.link/ru4mh0

Figure 7.15. Number of dentist consultations per person, 2019 and 2020



Note: The EU average is unweighted.
Source: OECD Health Statistics 2022; Eurostat Database.

StatLink https://stat.link/h67gsk

Availability of nurses

Nurses make up the most numerous category of health workers in nearly all EU countries. The key role they play in providing care in hospitals, long-term care facilities and the community was highlighted again during the COVID-19 pandemic. Pre-existing shortages of nurses were exacerbated during the peaks of the epidemic, particularly in intensive care units but also in other hospital units and long-term care facilities (OECD, forthcoming[1]).

The demand for nurses is expected to continue to rise in the coming years due to population ageing while many nurses are approaching retirement age. Increasing the retention rate of nurses in the profession is a growing concern to avoid exacerbating current and future shortages. Concerns about growing shortages have prompted many countries to increase the number of students in nursing education programmes, although it will take a few years before the impact is felt. Some countries continue to rely on international recruitment to address nurse shortages, although this may exacerbate shortages in those countries where these nurses are recruited.

On average across EU countries, there were 8.3 nurses per 1 000 population in 2020, a rise from 7.5 in 2010 (Figure 7.16). Among EU countries, the number of nurses per capita was highest in 2020 in Finland, Ireland and Germany. Outside the EU, the number was highest in Norway, Switzerland and Iceland, although about one-third of nurses in these latter two countries are trained at a lower level than general nurses and perform lower tasks. In some countries that have relatively low numbers of nurses such as Italy and Spain, a large number of health care assistants (or nursing aids) provide assistance to nurses. Greece has the lowest number of nurses per capita among EU countries, but the data only include nurses working in hospitals.

Between 2010 and 2020, the number of nurses per capita has increased in most EU countries, but not in some that already had a low density in 2010 (e.g. Latvia and the Slovak Republic), thereby widening the gap relative to other countries and the EU average.

Nurses greatly outnumber physicians in most EU countries. In 2020, there were more than two nurses per doctor on average across EU countries, with the nurse-to-doctor ratio reaching about four in Luxembourg and Finland (Figure 7.17). The ratio was much lower in Southern European countries and in Latvia.

Several countries have started to implement more advanced roles for nurses to improve access to care, including “nurse practitioner” roles. Evaluations of nurse practitioners in primary care in Finland, Ireland and the United Kingdom show that advanced practice nurses can improve access to services and reduce waiting times, while delivering the same quality of care as doctors for a range of patients, including those with minor illnesses and those needing routine follow-ups. These evaluations also find a high patient satisfaction rate (Maier, Aiken and Busse, 2017[2]).

Definition and comparability

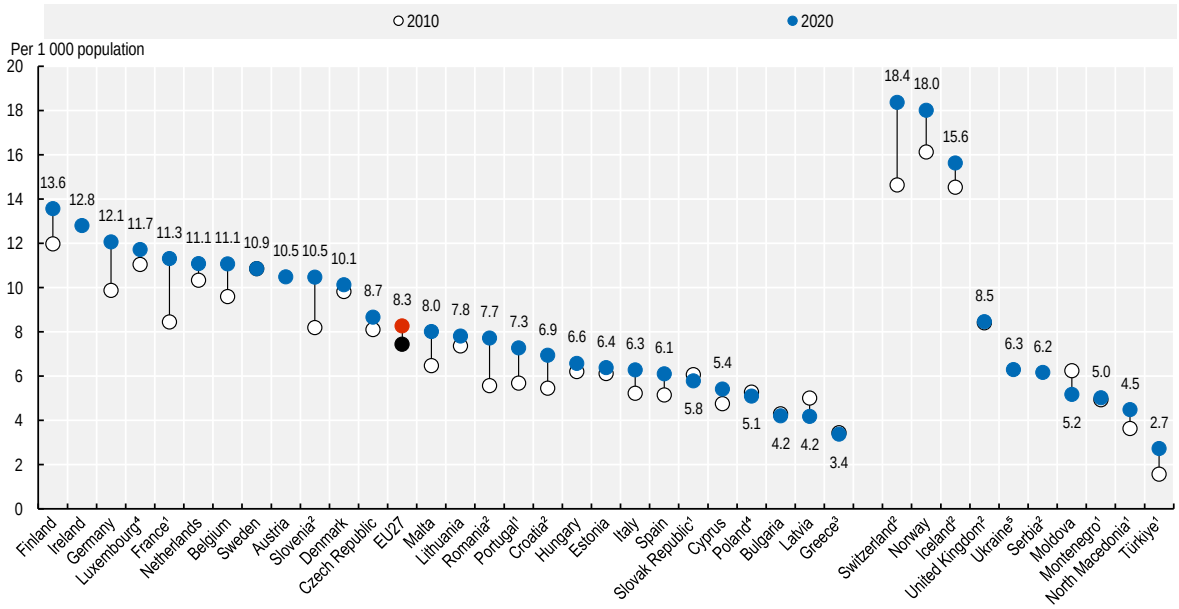
The number of nurses includes those providing services for patients (“practising”), but in some countries also those working as managers, educators or researchers (“professionally active”). In countries where there are different levels of nurses, the data include both “professional” nurses (including general and specialist nurses) and “associate professional” nurses who have a lower level of qualifications but are nonetheless recognised and registered as nurses in their country. Health care assistants (or nursing aids) who are not recognised as nurses are excluded. Greece reports only nurses working in hospitals (resulting in an underestimation).

References

Maier, C., L. Aiken and R. Busse (2017), “Nurses in advanced roles in primary care: Policy levers for implementation”, *OECD Health Working Papers*, No. 98, OECD Publishing, Paris, https://doi.org/10.1787/a8756593-en. [2]

OECD (forthcoming), *Ready for the Next Crisis? Investing in Resilient Health Systems*, OECD Health Policy Studies, OECD Publishing, Paris. [1]

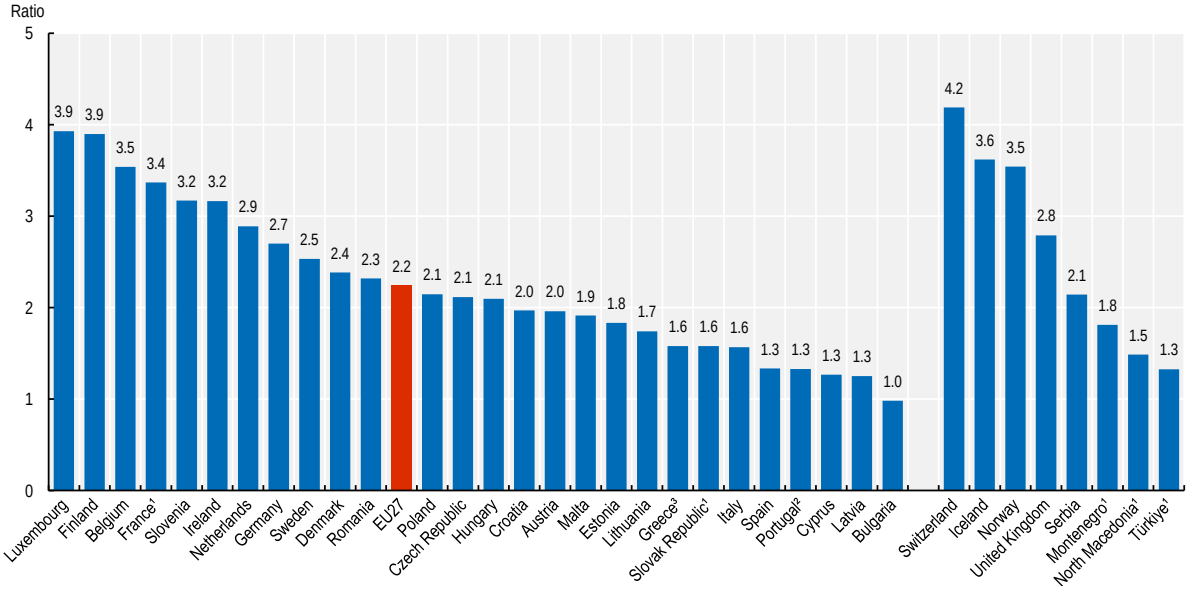
Figure 7.16. Practising nurses per 1 000 population, 2010 and 2020 (or nearest year)



Note: The EU average is unweighted. 1. Data include not only nurses providing direct care to patients, but also those working in the health sector as managers, educators, researchers, etc. 2. Associate professional nurses with a lower level of qualifications make up 70% or more of nurses in Croatia, Romania and Serbia; about 60% in Slovenia; about 33% in Switzerland and Iceland; and about 20% in the United Kingdom. In Switzerland, most of the growth since 2010 has been in this category. 3. Greece reports only nurses employed in hospitals. 4. The latest data refer to 2017 only. 5. The latest data refer to 2014 only.
Source: OECD Health Statistics 2022; Eurostat Database; WHO National Health Workforce Accounts for Moldova and Ukraine.

StatLink https://stat.link/l19udc

Figure 7.17. Ratio of nurses to doctors, 2020 (or nearest year)



Note: The EU average is unweighted. 1. For countries that have not provided data for practising nurses and/or practising doctors, the numbers relate to "professionally active" nurses and doctors. 2. The ratio for Portugal is underestimated (professionally active nurses / all doctors licensed to practise). 3. For Greece, the data refer to nurses and doctors employed in hospitals.
Source: OECD Health Statistics 2022; Eurostat Database.

StatLink https://stat.link/2goj0t

Remuneration of nurses

The COVID-19 pandemic has brought further attention to the pay rate of nurses and the need to ensure sufficient remuneration to attract and retain nurses in the profession.

On average across EU countries, the remuneration of hospital nurses in 2020 was slightly above the average wage of all workers. However, in some countries like Lithuania, France, Latvia and Finland, nurses earned less than the average wage of all workers (Figure 7.18).

Figure 7.19 compares the remuneration of hospital nurses in Euros adjusted for differences in cost-of-living to provide an indication of the relative economic well-being of nurses across countries and the financial incentives to consider moving to another EU country to obtain better-paid jobs. In 2020, nurses in Luxembourg and Belgium had remuneration levels more than three times higher than those working in Lithuania and Latvia. This explains at least partly why Luxembourg and Belgium are able to attract a large number of nurses from other countries. In general, nurses working in Central and Eastern European countries had the lowest levels of remuneration, also partly explaining why many choose to migrate to other EU countries.

In many countries, the remuneration of nurses has increased in real terms since 2010, albeit at different rates. In many Central and Eastern European countries, nurses have obtained substantial pay raises between 2010 and 2020, allowing them to partially catch up to the EU average (Figure 7.20, right panel). In many Western European countries, nurse pay increases over the past decade have been more modest. In France, the remuneration of hospital nurses in real terms was about the same in 2019 as in 2010. In Spain, the remuneration of nurses fell after the 2008-09 economic crisis due to wage cuts in the public sector, but it has recovered since 2013, so that the average remuneration level was about 7% higher in real terms in 2020 than in 2010. In Belgium and the Netherlands, the remuneration of nurses in real terms was about 7% to 10% higher in 2020 compared to a decade earlier, with a large part of the growth occurring in 2020.

Many countries provided one-off COVID-19 bonuses to nurses and other frontline health workers following the first wave of the pandemic in 2020, in recognition of the elevated health risks and their additional workload and commitment. The value of these bonuses and the coverage of nurses varied across countries. Permanently higher pay, rather than one-time bonuses, are an even more powerful tool to raise pay and recognise the value of nurses. Up to November 2021, there had been fewer government-led initiatives to provide permanent pay increase for nurses.

In France, most hospital workers, including nurses and nursing aids, received a COVID-19 bonus after the first wave, ranging from EUR 1 000 to EUR 1 500, depending on the intensity of the pandemic in each region. To improve recruitment and retention, all health workers in hospitals and nursing homes received a permanent pay raise of EUR 183 per month in 2020, followed by another raise of between EUR 45 and EUR 450 per month, depending on professional categories and years of experience (OECD/European Observatory on Health Systems and Policies, 2021[1]).

Definition and comparability

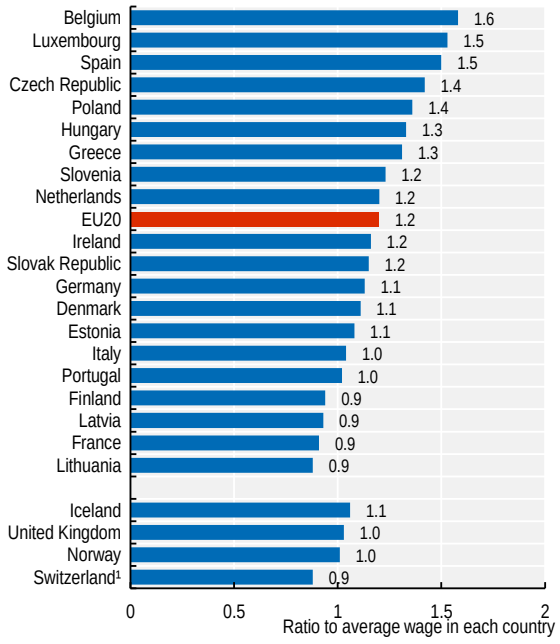
The remuneration of nurses refers to average gross annual income, including social security contributions and income taxes. In most countries, the data relate specifically to nurses working in hospitals. Data refer only to registered ("professional") nurses in most countries. The data for some countries (such as Italy and Slovenia) do not include additional income such as overtime payments. Informal payments, which represent a significant part of total income in some countries, are not reported.

The income of nurses is compared to the average wage of full-time employees in all sectors in the country. It is also compared across countries based on a common currency (Euros) and adjusted for cost-of-living (purchasing power parity or PPP).

References

OECD/European Observatory on Health Systems and Policies (2021), *France: Country Health Profile 2021*, State of Health in the EU, OECD Publishing, Paris, https://doi.org/10.1787/7d668926-en. [1]

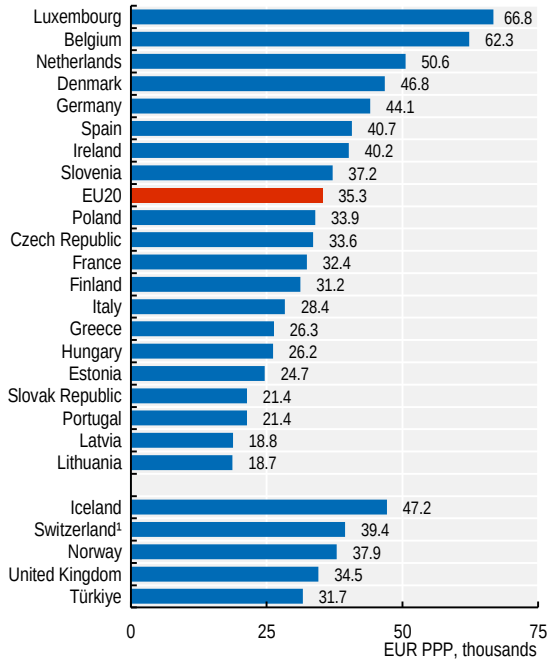
Figure 7.18. Remuneration of hospital nurses, ratio to average wage, 2020 (or nearest year)



1. The data also include "associate professional" nurses who have lower qualifications and revenues.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/ju7of8

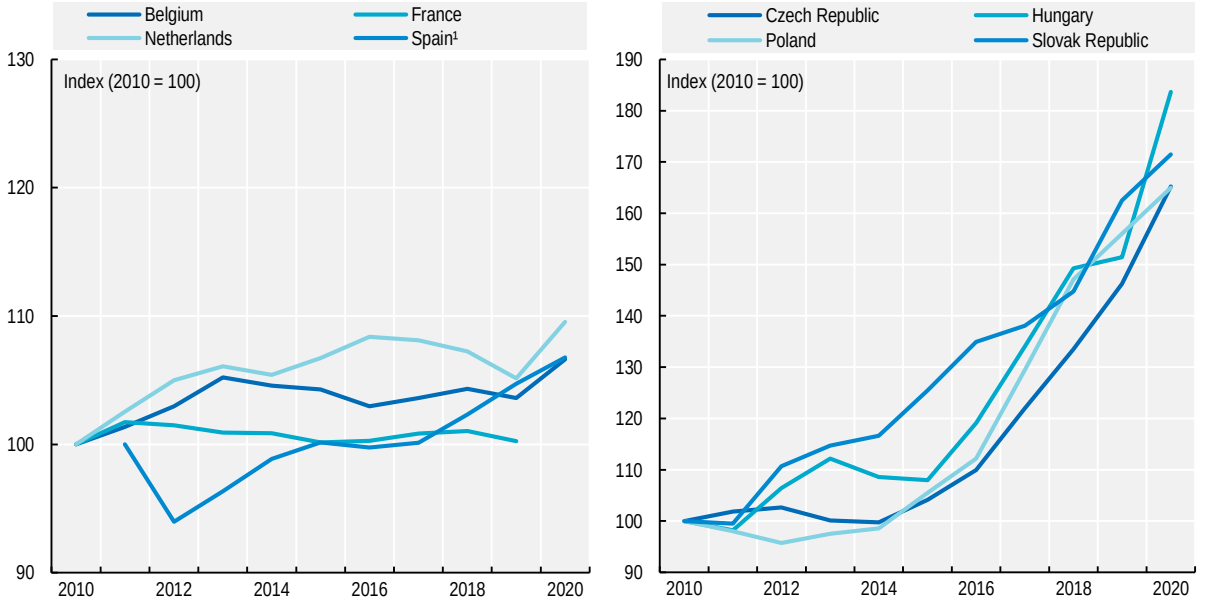
Figure 7.19. Remuneration of hospital nurses, EUR PPP, 2020 (or nearest year)



1. The data also include "associate professional" nurses who have lower qualifications and revenues.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/l58aur

Figure 7.20. Trends in remuneration of hospital nurses (in real terms), selected EU countries, 2010-20



1. Index for Spain, 2011 = 100.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/8iu49m

Use of diagnostic technologies

Modern diagnostic technologies play an important role in health systems, allowing physicians to better diagnose health issues. However, they can also drive up costs, particularly if they are overused or misused.

This section focuses on the use of three diagnostic imaging technologies that can help diagnose different health issues: computed tomography (CT), magnetic resonance imaging (MRI) and positron emission tomography (PET) exams. CT and MRI exams both show images of internal organs and tissues, while PET scans show other information and problems at the cellular level. Unlike more traditional radiography and CT scanning, MRI and PET exams do not expose patients to ionising radiation, which can increase the risk of cancer if the exposition of radiation is not properly managed. CT exams were first introduced in the 1970s, MRI exams in the 1970s and the 1980s, while PET exams were introduced around the year 2000.

In 2019 (the year before the pandemic), the use of these three diagnostic exams taken together was highest in Austria, France, Luxembourg, Belgium and Germany, with utilisation rates at least 40% higher than the average across EU countries. The utilisation rate was lowest in Romania and Bulgaria with rates less than half the EU average (Figure 7.21).

Figure 7.22 highlights the large variation in the use of MRI exams between Western European countries and Central and Eastern European countries. While the use of MRI exams has increased over the past two decades in all countries, there was still in 2019 a ten-fold difference in their use between the three countries that use them the most (Germany, Austria and France) and the three countries that use them the least (Cyprus, Romania and Bulgaria).

During the pandemic that started in early 2020, diagnostic activities as well as other health services were disrupted and sometime temporarily suspended to divert efforts towards COVID-19 patients and avoid people getting infected while seeking diagnostics or care. Across 22 EU countries, over 7 million fewer MRI, CT and PET diagnostic exams were performed in 2020 compared with 2019. The reduction was particularly marked in Greece and Lithuania (Figure 7.21). This reduction in diagnostic activities has generated backlogs in some countries, leading to longer waiting times and waiting lists in 2020 and 2021.

Several EU countries have developed policies to increase the supply of diagnostic tests following the first waves of the pandemic, including creating diagnostic dedicated hubs and performance monitoring (OECD, forthcoming[1]).

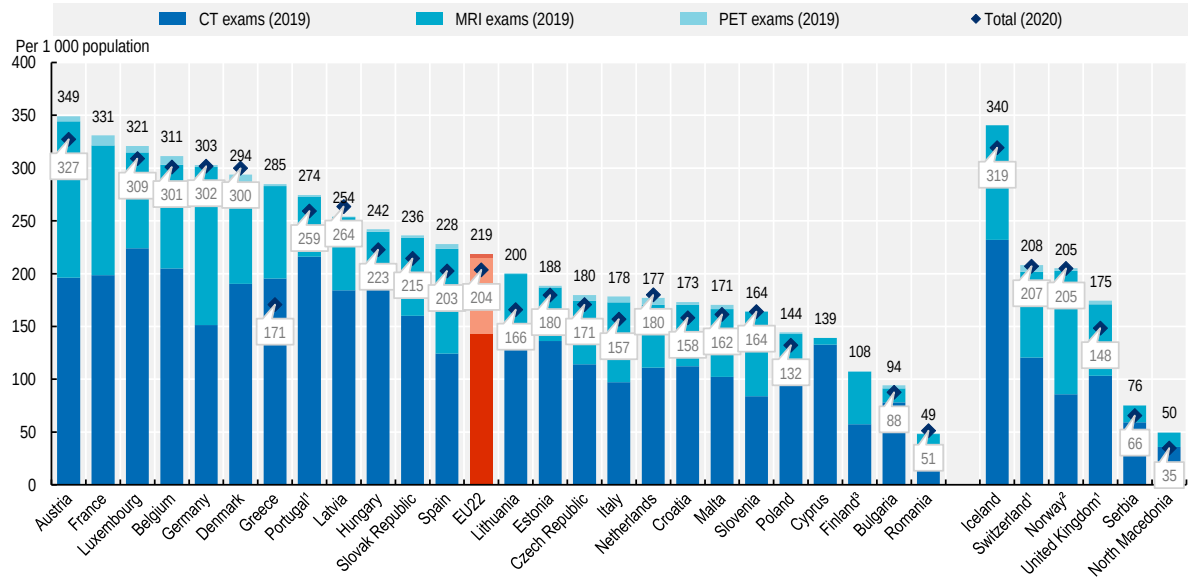
Definition and comparability

While the data in most countries cover CT, MRI and PET exams in hospitals as well as in the ambulatory sector, the data coverage is more limited in some countries. Any CT, MRI and PET exams performed outside hospitals are not included in Portugal, Switzerland and the United Kingdom. Exams in Cyprus only cover public hospitals. The Netherlands only report data on publicly-financed exams.

References

OECD (forthcoming), *Ready for the Next Crisis? Investing in Resilient Health Systems*, OECD Health Policy Studies, OECD Publishing, Paris. [1]

Figure 7.21. CT, MRI and PET exams per 1 000 population, 2019 and 2020



Note: The EU average is unweighted. 1. Any exams outside hospital are not included in Portugal, Switzerland and the United Kingdom. 2. Any exams in hospital are not included in Norway. 3. The data for Finland relate to 2018.
Source: OECD Health Statistics 2022; Eurostat Database.

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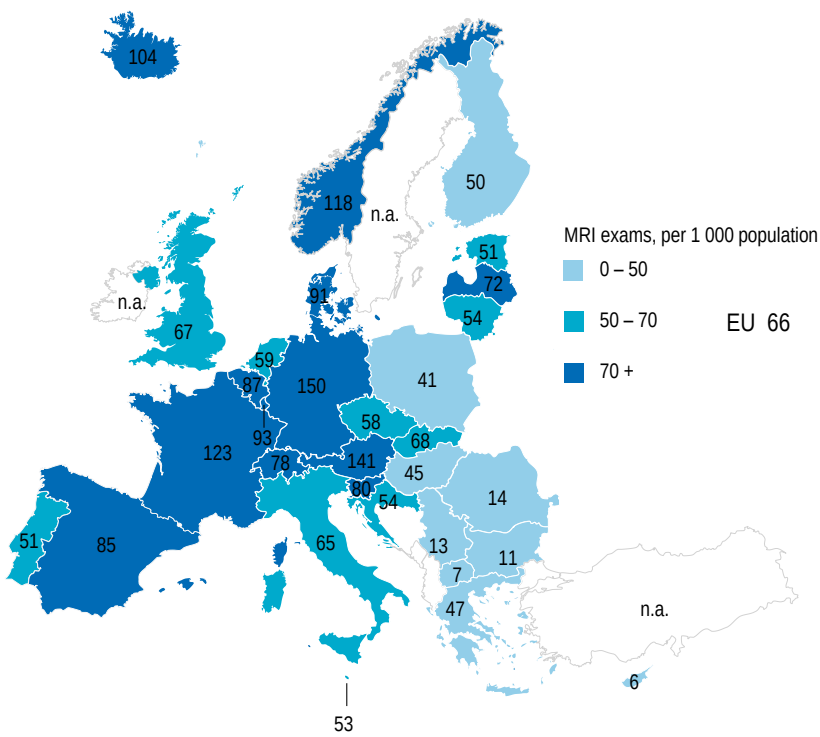
Figure 7.22. MRI exams per 1 000 population, 2020 (or nearest year)



Note: The EU average is unweighted. Exams outside hospital are not included in Portugal, Switzerland and the United Kingdom. Exams in hospital are not included for Norway.
Source: OECD Health Statistics 2022; Eurostat Database.

Hospital beds and discharges

The COVID-19 pandemic highlighted the need to have a sufficient number of hospital beds and flexibility in their use to address any unexpected surge in demand.

Across EU countries, there were on average 5 hospital beds per 1 000 population in 2020 (Figure 7.23). Germany, Bulgaria, Romania and Austria had the highest number with more than 7 beds per 1 000 population (40% higher than the EU average). Nordic countries (Finland, Denmark and Sweden), Ireland and the Netherlands had the lowest number, with less than 3 beds per 1 000 population.

Since 2010, the number of hospital beds per capita has decreased in nearly all EU countries due partly to the growing use of day care and the reduction in average length of stays. On average, the number of hospital beds per capita fell by 9% between 2010 and 2020. The largest reduction occurred in Finland, with a fall of over 50%. This reduction mainly affected long-term care and psychiatric care beds. In addition, hospital infrastructure restructuring in recent years in Finland has centralised a wide array of services in a small number of university and major hospitals, with the remaining smaller hospitals providing a more limited range of services. The number of hospital beds per population also came down substantially in the Netherlands, Sweden and Luxembourg. In Luxembourg, this reduction was driven mainly by strong population growth while the absolute number of beds remained fairly stable.

Hospital discharges in 2020 were highest in the three countries that had the highest number of beds – Bulgaria, Germany and Austria (Figure 7.24). They were lowest in the Netherlands, Portugal, Italy and Spain. These variations in hospital stays reflect to a large extent differences in the supply of beds, clinical practices, and payment systems that might provide incentives for hospitals to encourage bed usage.

Between 2019 and 2020, hospital stays decreased in all EU countries due to the pandemic, as non-urgent services were disrupted to avoid people being infected and hospitals becoming overwhelmed. On average, hospital discharges decreased by 17% between 2019 and 2020, ranging from about 7% in Sweden and Denmark to around 40% in Romania.

Bed occupancy rates give an indication of any spare capacity in hospitals to admit additional patients if needed. Although there is no general consensus about the “optimal” occupancy rate, an occupancy rate of about 85% is often considered as a maximum to reduce the risk of bed shortages when there is a sudden increase in need for admissions as was the case during the pandemic (NICE, 2018[1]). Between 2019 and 2020, the bed occupancy rate in curative care units decreased by 13% on average in EU countries for which data are available (Figure 7.25). This is also because non-urgent hospital care was suspended or slowed down during the early stages of the pandemic.

The indicator on “Intensive care beds” in Chapter 8 provides further information on the availability and occupancy rates of intensive care beds during the pandemic.

Definition and comparability

Hospital beds include available beds in general hospitals, mental health and other specialty hospitals. Data for some countries do not cover all hospitals. In the United Kingdom, data are restricted to public hospitals. In Ireland, data refer to acute hospitals only. Beds for same-day care may be included in some countries (e.g. Austria and the Netherlands).

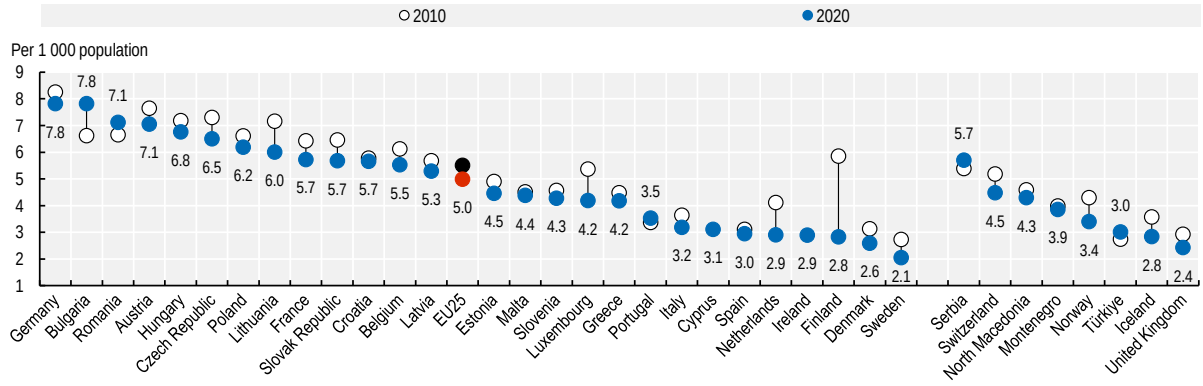
Discharge is defined as the release of a patient who has stayed at least one night in hospital. Same-day separations are excluded. Healthy babies born in hospitals are excluded from hospital discharge rates in several countries (these comprise between 3% and 10% of all discharges). In Ireland and the United Kingdom, data are restricted to public or publicly-funded hospitals only. Data for the Netherlands and North Macedonia include only acute care, resulting in some under-estimation.

The occupancy rate for curative care beds is calculated as the number of hospital bed-days related to curative care divided by the number of available curative care beds (multiplied by 365).

References

NICE (2018), “Emergency and acute medical care in over 16s: service delivery and organisation”, in *NICE guideline 94*, NICE, https://www.nice.org.uk/guidance/ng94/. [1]

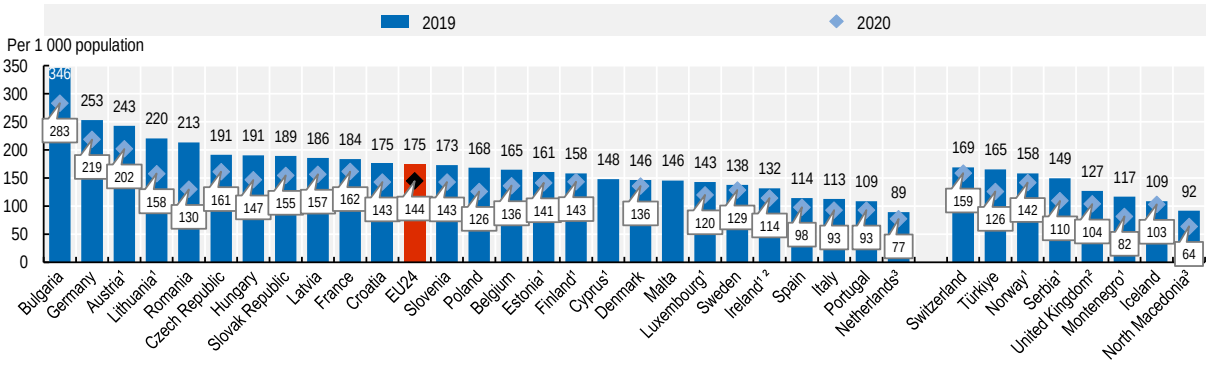
Figure 7.23. Hospital beds per 1 000 population, 2010 and 2020 (or nearest year)



Note: The EU average is unweighted.
Source: OECD Health Statistics 2022; Eurostat Database.

StatLink https://stat.link/lkerm3

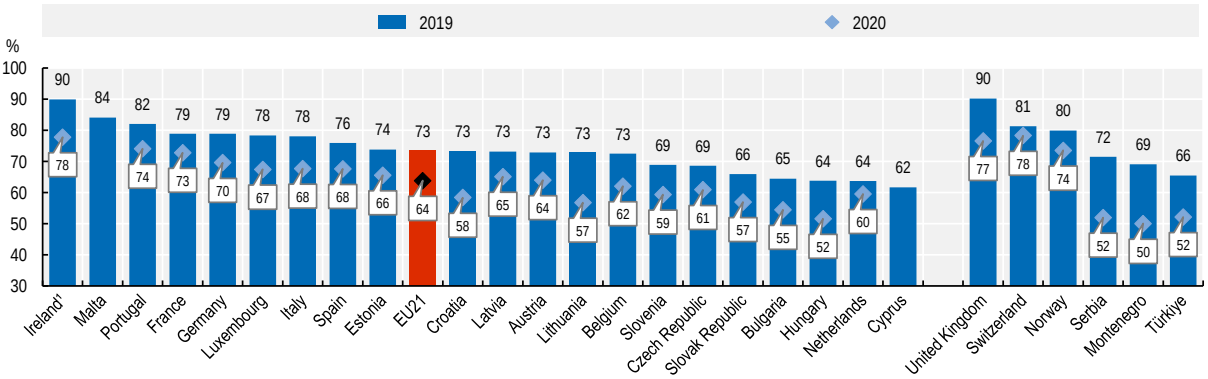
Figure 7.24. Hospital discharges per 1 000 population, 2019 and 2020



Note: The EU average is unweighted. 1. Data exclude discharges of healthy babies (between 3-10% of all discharges). 2. Data exclude activity in private hospitals (in Ireland, private hospitals account for about 15-20% of hospital discharges). 3. Data include discharges for curative (acute) care only.
Source: OECD Health Statistics 2022; Eurostat Database.

StatLink https://stat.link/17n8qu

Figure 7.25. Occupancy rate of curative (acute) care beds, 2019 and 2020



Note: The EU average is unweighted. 1. Data for Ireland exclude private hospitals.
Source: OECD Health Statistics 2022; Eurostat Database; UK data from NHS England.

StatLink https://stat.link/qt0pol

Volumes of hip and knee replacements

Hip and knee replacements are amongst the most frequent elective (non-urgent) surgical procedures in the EU. Until the pandemic, hip and knee replacement rates were growing fairly steadily, driven by increases in osteoarthritis and other types of arthritis caused by ageing populations and growing obesity rates.

Before the pandemic in 2019, Germany, Austria, Finland and Belgium had the highest rates of hip and knee replacement among EU countries. Outside the EU, Switzerland and Norway also had relatively high rates (Figure 7.26 and Figure 7.27). While differences in the population structure and the share of older populations explain part of the variation in hip and knee replacement rates across countries, earlier OECD work has shown that large differences persist even after taking into account such differences in population structure and the country ranking does not change significantly (McPherson, Gon and Scott, 2013[1]).

In the first year of the pandemic, the volume of hip and knee replacements fell sharply in many EU countries as elective surgery was suspended for many weeks to free up resources to deal with COVID-19 patients and avoid people being infected while seeking care. Across 23 EU countries for which data are available, over 240 000 fewer hip and knee replacements were performed in 2020 compared with 2019. On average across these 23 EU countries, the volume of hip replacements reduced by 13% and knee replacements by 22%. Belgium, Hungary and Romania experienced particularly steep reductions in hip and knee replacements during the first year of the pandemic. Outside the EU, the drop in the United Kingdom was even larger (over 45% for hip replacement and 65% for knee replacement). These reductions in the volume of orthopaedic procedures have generated a backlog of patients waiting for treatment and an increase in waiting times (see indicator "Waiting times for elective surgery").

Initial data for 2021 from a few countries indicate that hip and knee replacement rates increased at least moderately in Ireland, but rebounded more strongly in some countries to come back to their pre-pandemic level in Portugal or close to their pre-pandemic level in Norway. However, to address the backlog generated during the pandemic, it may not be sufficient to simply return to pre-pandemic activity levels. To illustrate this simply, if the volume of hip replacements in a given country fell by 15% in 2020 and if the volume went back to the pre-pandemic level in 2021, the volume would have to be at least 5% higher for three consecutive years to catch up with the initial drop if the demand for this surgical procedure remains unchanged.

Many countries have taken actions to reduce the backlog of elective surgery created during the pandemic by providing additional funding to boost supply. This additional funding has been used to pay overtime for additional sessions and increase the use of operating theatres, and contract private providers in countries where public and private systems co-exist (see Chapter 2 for further discussion on national strategies to reduce backlogs).

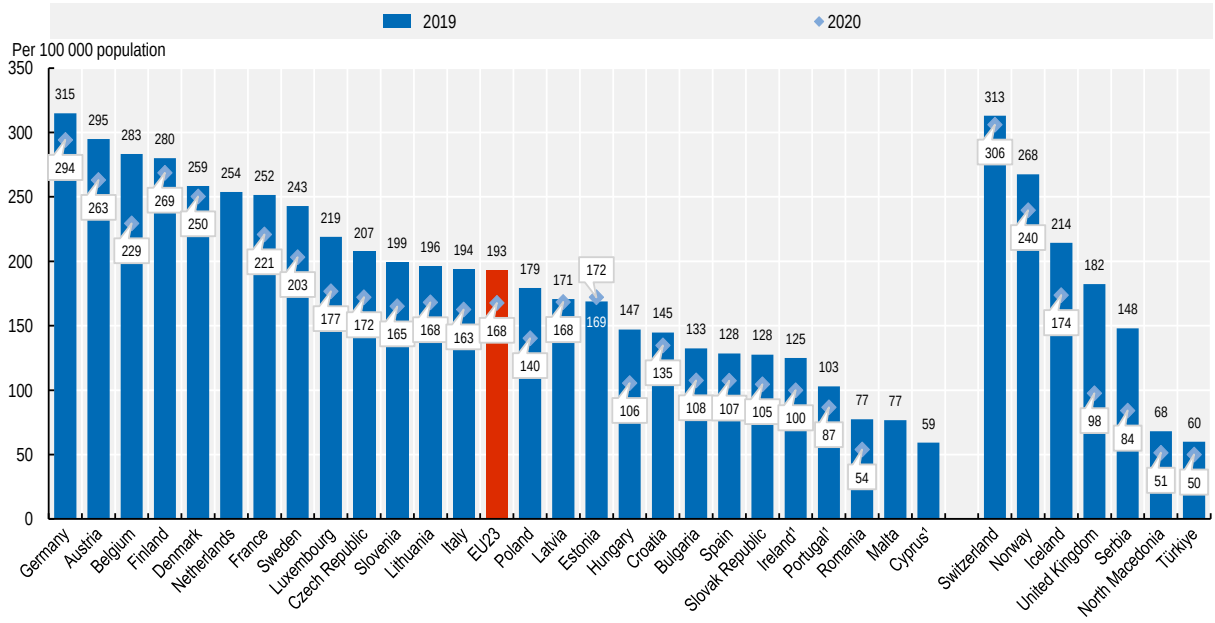
Definition and comparability

While most countries include both total and partial hip replacement, some countries only include total replacement. Data for some countries do not cover all hospitals. In Cyprus, Ireland and the United Kingdom, the data only include activities in publicly-funded hospitals, thereby underestimating the total number of procedures (for example, approximately 15% of all hospital activity in Ireland is undertaken in private hospitals). Data for Portugal relate only to public hospitals on the mainland.

References

McPherson, K., G. Gon and M. Scott (2013), "International Variations in a Selected Number of Surgical Procedures", *OECD Health Working Papers*, No. 61, OECD Publishing, Paris, https://doi.org/10.1787/5k49h4p5g9mw-en. [1]

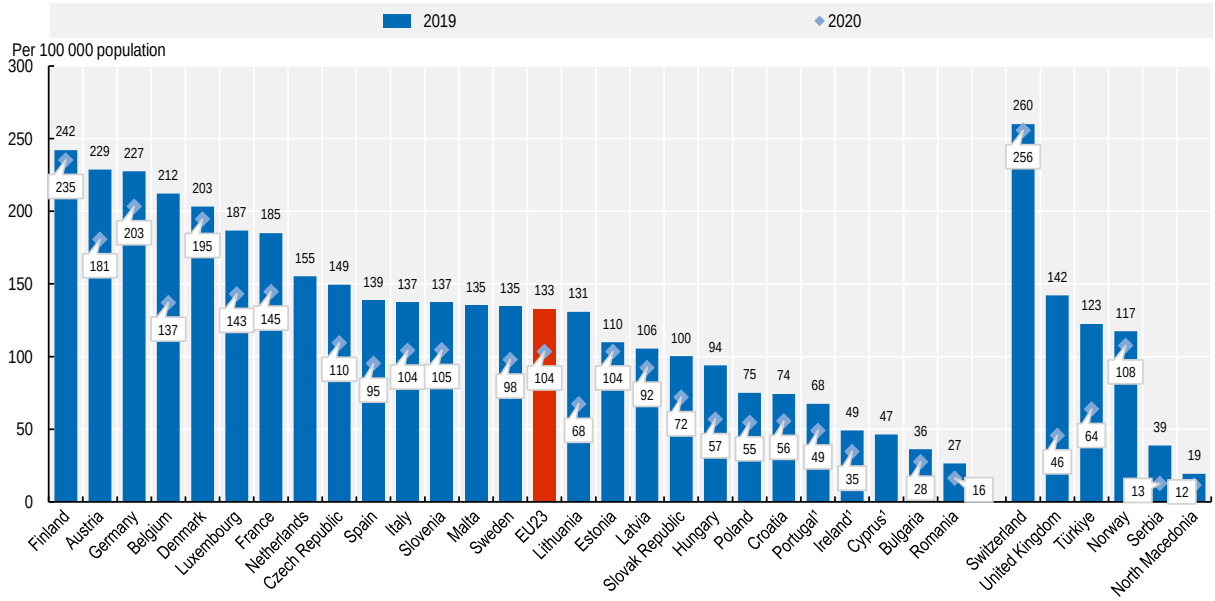
Figure 7.26. Hip replacement, 2019 and 2020



Note: The EU average is unweighted. 1. Data cover only surgical operations carried out in public hospitals. In Ireland, the inclusion of private hospitals would almost double the volume of operations in 2020 (197 per 100 000 population).
Source: OECD Health Statistics 2022; Eurostat Database.

StatLink https://stat.link/wvxj65

Figure 7.27. Knee replacement, 2019 and 2020



Note: The EU average is unweighted. 1. Data cover only surgical operations carried out in public hospitals. In Ireland, the inclusion of private hospitals would more than triple the volume of operations in 2020 (110 per 100 000 population).
Source: OECD Health Statistics 2022; Eurostat Database.

StatLink https://stat.link/shrlp8

Waiting times for elective surgery

Long waiting times for elective (non-urgent) surgery have been a longstanding issue in many European countries dating back well before the pandemic, but the disruption of elective care during the pandemic exacerbated waiting times as many non-urgent interventions were suspended, generating more backlogs of patients on waiting lists. Long waiting times generate dissatisfaction for patients because the health benefits from treatment are postponed, patients can experience pain and discomfort while waiting, and the wait may worsen health outcomes for patients before and after the intervention.

The data presented in this section focus on waiting times for three high-volume surgical procedures: cataract surgery, hip replacement and knee replacement. They review the experience of patients who have been treated after waiting for a certain period of time and those who were still on the waiting lists. In several countries, the waiting times for patients still on waiting lists have increased much more than for those who were treated.

Looking at the situation just before the pandemic, the mean waiting times for people who had a cataract surgery in 2019 varied widely, from about 40 to 60 days in Hungary, the Netherlands, Denmark and Italy, to over 200 days in Poland and 250 days in Estonia (Figure 7.28, left panel). In 2020, the mean waiting times for patients treated increased slightly in Hungary, the Netherlands, Spain, Finland and Norway, while it remained stable in Italy, Sweden and Portugal, and came down in Estonia but from very high levels. For patients still on waiting lists, the proportion who had been waiting for over three months increased in all countries in 2020, with the exception of Portugal and Poland. The increase was particularly marked in Hungary, Spain and Ireland (Figure 7.28, right panel).

For hip replacement, the mean waiting times for patients treated before the pandemic in 2019 ranged from 45 to 85 days in Denmark, the Netherlands, Lithuania, Italy and Finland, to 300 days in Poland and over 400 days in Estonia (Figure 7.29, left panel). During the first year of the pandemic, waiting times for patients who got a hip replacement increased markedly in Lithuania and to a lesser extent in the Netherlands, Sweden, Norway and Estonia. For patients still on the waiting lists, the proportion waiting for a hip replacement for over three months increased in all countries in 2020, and particularly in Sweden, Spain, Ireland, Hungary and Portugal (Figure 7.29, right panel).

Regarding knee replacement, the cross-country variations in waiting times are fairly similar to the variations for hip replacement both before and after the pandemic, although in most countries the waiting times are generally longer for a knee than a hip replacement. The mean waiting times to get treatment in 2020 increased greatly in Lithuania and to a lesser extent in the Netherlands, Sweden, Norway, Spain and Portugal, while it remained stable but a very high level in Estonia (Figure 7.30, left panel). For patients still waiting for a knee replacement, the proportion waiting for more than three months increased in all countries, and in some cases quite markedly (Figure 7.30, right panel).

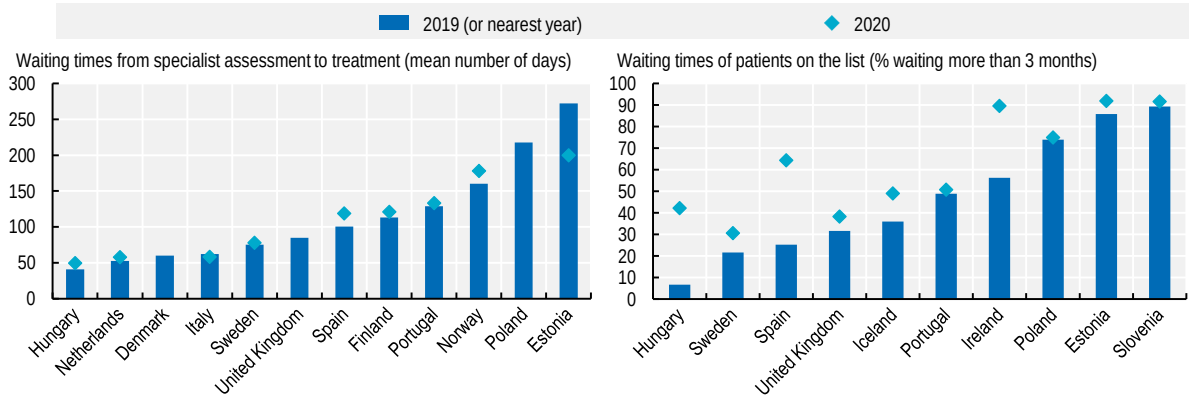
Many EU countries have taken actions to address the backlogs and longer waiting lists for elective care that were generated by the disruption of services during the pandemic. Most of these policies focus on increasing surgical activities supported through additional funding in countries like Finland, Ireland, Italy, Lithuania, Portugal and Slovenia (see Chapter 2 for further discussion on national strategies to reduce backlogs).

Definition and comparability

Two different measures of waiting times are presented in this section: 1) from the time that a specialist adds a patient to the waiting list for an operation to the time that the patient receives the operation; 2) the waiting times for patients who are still on the waiting lists at a given point in time. Waiting times for the first measure are reported as the mean number of days, while the second measure is reported as a proportion of those who have been waiting for over three months.

The data come from administrative databases. The management of administrative data varies across countries. In some countries, patients who refuse on several occasions to receive the procedure are removed from the list, while they continue to be kept on the list in other countries (e.g. Estonia).

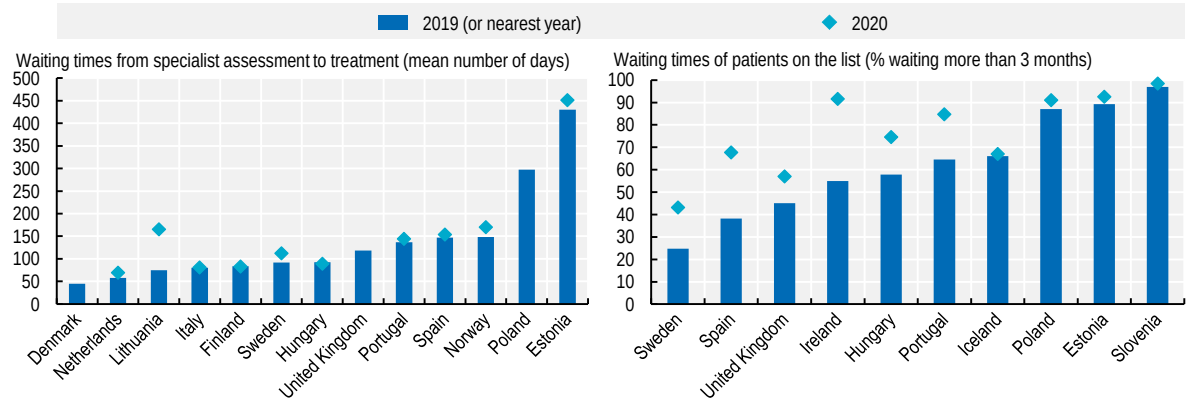
Figure 7.28. Waiting times for cataract surgery, 2019 and 2020



Note: Waiting times for Norway are overestimated due to an earlier starting point.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/0r6anq

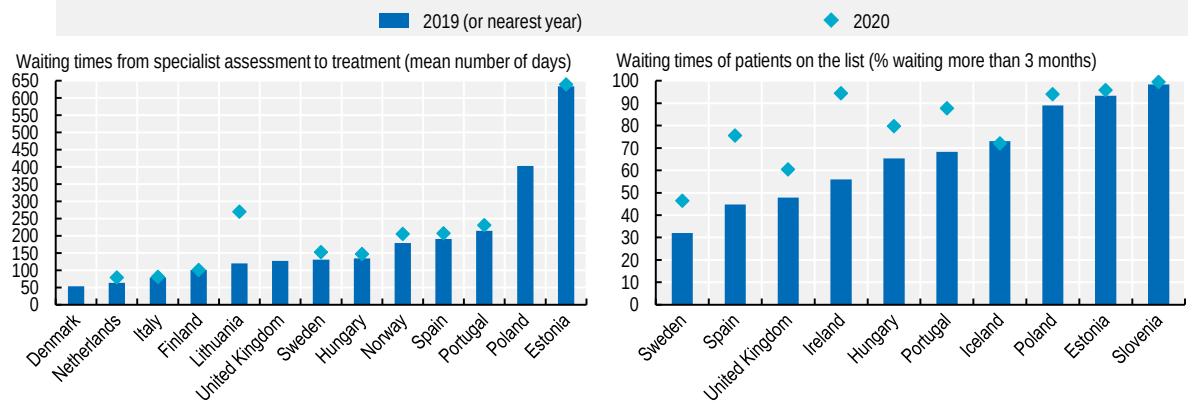
Figure 7.29. Waiting times for hip replacement, 2019 and 2020



Note: Waiting times for Norway are overestimated due to an earlier starting point.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/lroukp

Figure 7.30. Waiting times for knee replacement, 2019 and 2020



Note: Waiting times for Norway are overestimated due to an earlier starting point.
Source: OECD Health Statistics 2022.

StatLink https://stat.link/7anisd

8 Resilience: Crisis preparedness, responses and fiscal sustainability

This chapter presents indicators related to the resilience of health systems. The resilience of health systems involves distinct functions: preparing to avoid shocks, absorbing and recovering from them, and then adapting systems. The indicators in this chapter partially cover all these functions. The COVID-19 pandemic is the largest shock many health systems have faced. The response of health systems to it offers insights into their resilience. Those responses included the pivot to new methods of safely delivering health care with a doubling of the share of teleconsultations, and the rapid and widespread delivery of vaccinations. Vaccinations were estimated to have prevented over 250 000 deaths across the EU during the first year of vaccination. During the pandemic, the response of health systems required adaptability. The scale of change was uneven across EU countries. Vaccination ranged from less than half to almost all people aged at least 60 years. Countries should use the experience gained since 2020, including these indicators, to guide their adaption of health systems to strengthen resilience. COVID-19 is not the only shock that health systems will likely face: climate change, armed conflict and anti-microbial resistance are other challenges that will require resilience.

Vaccination against COVID-19

Use of teleconsultations

Public health laboratory capacity

Essential equipment: Intensive care beds

Adoption of Electronic Medical Records

Capital expenditure in the health sector

Projections of public expenditure on health and long-term care

Vaccination against COVID-19

The rapid development and deployment of vaccines was an important contributor to pandemic management. The deployment of COVID-19 vaccines in situations of severe vaccine shortages required countries to prioritise their vulnerable populations. Alongside ensuring sufficient vaccine supply, other challenges included a shortage of equipment and staffing, logistics, managing several different vaccines, and the spread of mis- and disinformation. Adjustments were required, which included changes in eligible age according to the type of vaccination, the time interval between doses, recommendations for those infected previously with SARS-CoV-2, and new variants of concern. Countries adopted varying prioritisation strategies, depending on the main objective of their vaccination programmes. The elderly, health care workers and adults with co-morbidities were prioritised most commonly (ECDC, 2020[1]).

The elderly population was prioritised by all countries. Within the first half of 2021, an average of 68% of those aged 60 years and over completed their initial vaccination course across 27 EU countries. This increased to 84% by the end of 2021. The vaccination rate varied greatly across countries. Iceland, Malta and Denmark vaccinated more than 90% of the population aged 60 years or over within the first half of 2021. In contrast, the lowest vaccination rates were observed in Bulgaria (21%), Romania (32%) and Latvia (40%), achieving less than 50% coverage (Figure 8.1). Amongst the countries that reported on the vaccination of these groups in the ECDC data, the average completion of the initial vaccination course in 2021 was 68% for health care workers (15 countries) and 72% for long-term care residents (11 countries).

Vaccinating the whole population was crucial to minimising the risk of death and severe complications from COVID-19 infection. After prioritising access to vaccination for the most at-risk groups in the first half of 2021, countries vaccinated the rest of their populations. It has been estimated that vaccination campaigns led to a reduction in deaths from COVID-19 in those aged 60 and older by 250 000 people in the first year of vaccination across 23 EU countries. Countries with a high early vaccination, such as Malta and Ireland, were estimated to have reduced deaths by 70% (Meslé et al., 2021[2]).

By the end of 2021, 27 EU countries had vaccinated an average of 77% of the population aged 18 years and over, but with a wide variation. Portugal, Ireland, Malta and Denmark achieved the highest rates, with above 90% completion of an initial vaccination course. Countries in Central and Eastern Europe, such as Bulgaria, Romania, the Slovak Republic, Croatia and Poland, achieved a completion rate of below 65% among all adults by the end of 2021 (Figure 8.2). Improvements in vaccination coverage, including by reducing barriers (such as dis-information), remains crucial to resilient health systems.

Definition and comparability

COVID-19 vaccination coverage is based on ECDC data on vaccinated doses and population per target group, collected through the European Surveillance System. Two doses were considered as completing the initial vaccination course and having vaccinated status, except for the Janssen vaccine. This may not represent the requirements for groups such as the immunocompromised.

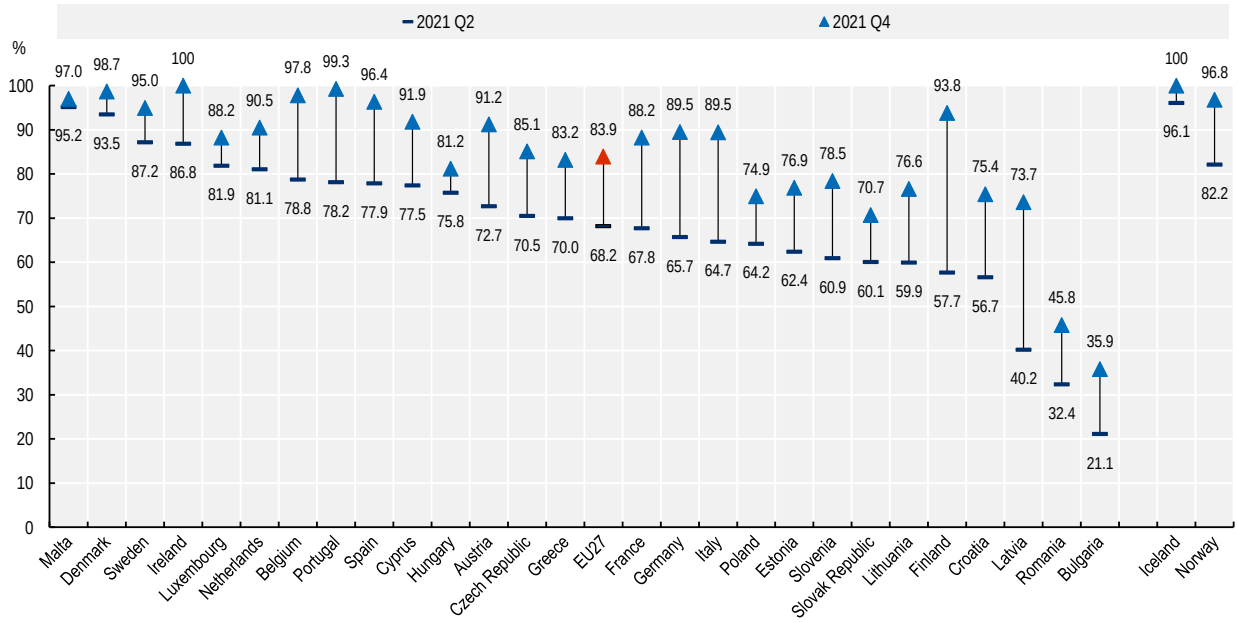
The estimates may differ from national estimates due to alterations in the target population size during the pandemic. Estimates greater than 100% have been truncated.

References

ECDC (2020), *COVID-19 vaccination and prioritisation strategies in the EU/EEA*, https://www.ecdc.europa.eu/en/publications-data/covid-19-vaccination-and-prioritisation-strategies-eueea. [1]

Meslé, M. et al. (2021), "Estimated number of deaths directly averted in people 60 years and older as a result of COVID-19 vaccination in the WHO European Region, December 2020 to November 2021", *Eurosurveillance*, Vol. 26/47, https://doi.org/10.2807/1560-7917.es.2021.26.47.2101021. [2]

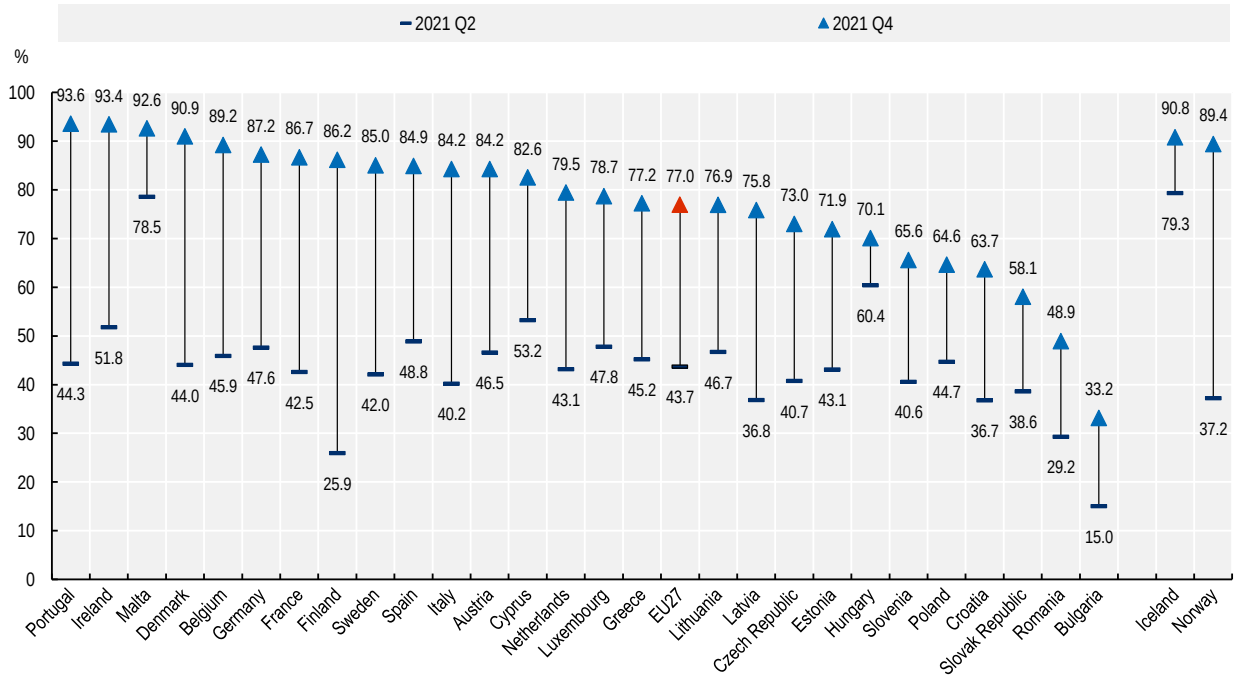
Figure 8.1. Initial COVID-19 vaccination course completion among people aged 60 and over, 2021



Note: Initial vaccination course was assumed to be completed with two vaccinations (or one of Janssen). The EU average is unweighted.
Source: ECDC, 2022.

StatLink https://stat.link/21pf3z

Figure 8.2. Initial COVID-19 vaccination course completion among all adults (18 years and over), 2021



Note: Initial vaccination course was assumed to be completed with two vaccinations (or one of Janssen). Germany included all completed vaccinations, irrespective of age, and the calculated rate for Q4 2021 may be overestimated by 5.9%. The EU average is unweighted.
Source: ECDC, 2022.

StatLink https://stat.link/vws5ry

Use of teleconsultations

Consultations with doctors are the most frequent contact most people have with health services and provide an entry point for subsequent medical treatment. Consultations can take place in different settings and are increasingly online. COVID-19 has had a substantial impact on how people consult doctors. Stay-at-home orders and the suspension of non-urgent care contributed to fewer in-person doctor consultations, which was partly offset by increased teleconsultations.

Governments acted rapidly at the beginning of the pandemic to promote the use of teleconsultations by introducing enabling legislation and revising laws (OECD, forthcoming[1]). After the pandemic started, at least four EU countries that allowed only in-person consultations dropped this restriction (Estonia, Hungary, Ireland and Luxembourg). Three additional EU countries relaxed a prerequisite that patients were allowed to have teleconsultations with physicians that they had already consulted in-person (France, Germany and Lithuania). Governments also promoted the use of telemedicine through changes in providers' payment systems. Six EU countries began covering teleconsultations through government/compulsory schemes (Belgium, Czech Republic, Estonia, Hungary, Latvia and Luxembourg).

Between 2019 and 2020, in-person consultations fell by almost 20% on average across EU countries. In-person consultations fell by more than one-third in Lithuania and Spain, and by less than 10% in the Czech Republic and Finland. However, the declines in in-person consultations were completely offset by increasing numbers of teleconsultations in Poland, Denmark and Spain, and partly offset in many other countries (Figure 8.3). The share of teleconsultations doubled between 2019 and 2020 (from 11% to 22% [12 countries]). Before the pandemic, consultations via phone or video accounted for fewer than 10% in all but two EU countries. Denmark had the highest share of teleconsultations pre-pandemic, at 45%. Teleconsultations in Denmark were possible through different solutions, for example the national "My Doctor" mobile application that was set-up as part of its Digital Health Strategy 2018-22 (OECD/European Observatory on Health Systems and Policies, 2021[2]).

The Eurofound e-survey data highlight that the proportion of adults who reported having a medical consultation online or by phone increased dramatically during the pandemic: by mid-2020, almost one in three adults had used a teleconsultation, a proportion that went up to 40% by early 2021 (Figure 8.4). Countries where the use of teleconsultations was highest in mid-2020 also had higher growth rates between mid-2020 and early 2021, suggesting an increasing divergence. The proportion of adults who reported having a teleconsultation in February/March of 2021 ranged from less than 25% in France and Germany to more than 65% in Spain and Slovenia. The adaptation of health services to increased teleconsultations helped absorb the shock of the pandemic and prevented further infections.

Definition and comparability

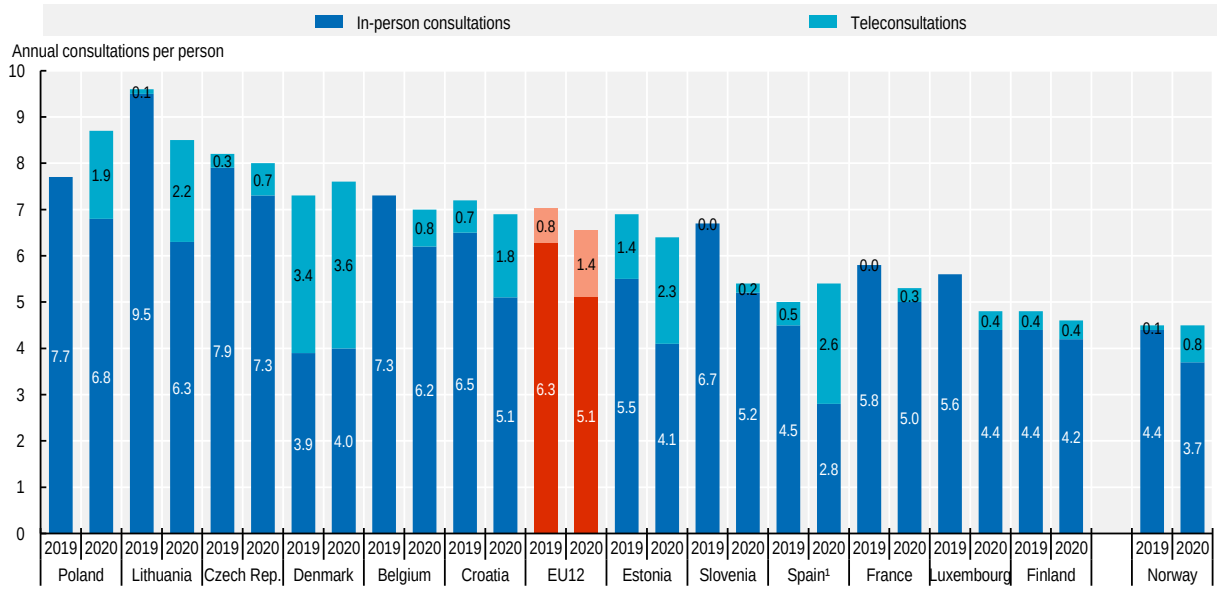
Data on doctor consultations in person and through teleconsultations are based mainly on administrative data and were collected through an OECD/Eurostat/WHO-Europe Joint Questionnaire. The share of adults reporting medical consultations online or by phone during the pandemic was sourced from Eurofound's *Living, working and COVID-19 e-survey*. The survey was undertaken in July 2020 and March 2021, with the relevant question ("Since the pandemic began, have you received any of the following services from a doctor – medical consultation online or by telephone?"). Caution is required when comparing between countries because of the open-ended nature of the question.

References

OECD (forthcoming), *The COVID-19 Pandemic and the Future of Telemedicine*, OECD Health Policy Studies, OECD Publishing, Paris. [1]

OECD/European Observatory on Health Systems and Policies (2021), *State of Health in the EU*, Country Health Profiles, OECD Publishing, Paris, https://doi.org/10.1787/25227041. [2]

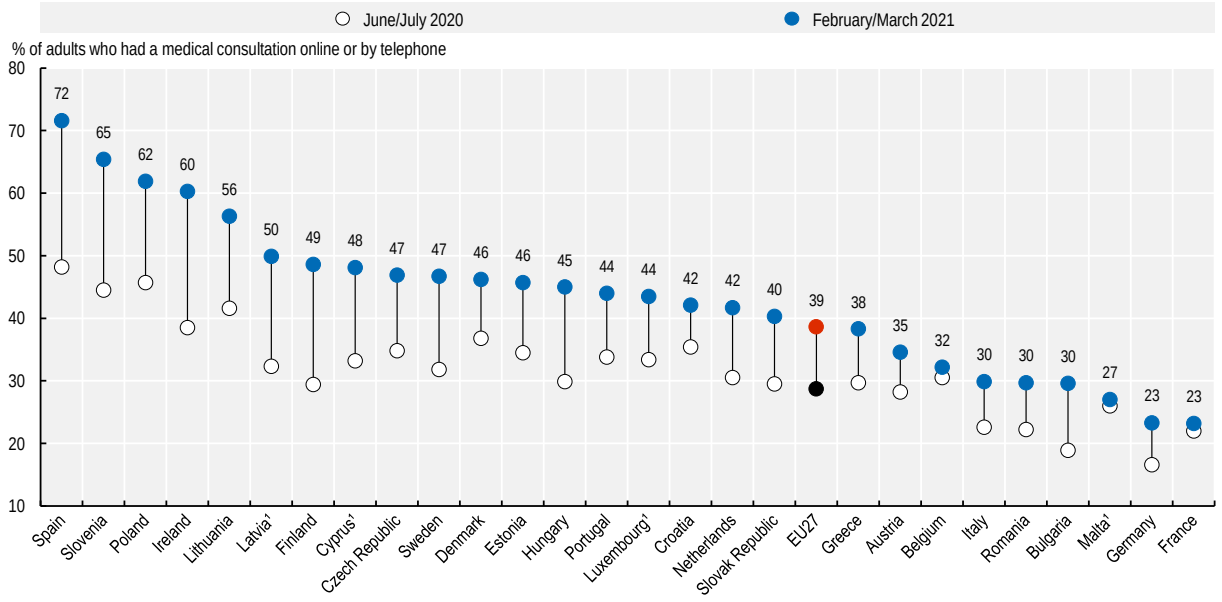
Figure 8.3. In-person consultations and teleconsultations with doctors, 2019 and 2020



Note: The EU average is unweighted. 1. Data for Spain are underestimated as they only include consultations in primary health care centres of the National Health System.
Source: OECD Health Statistics 2022 (for in-person consultations) and national sources (for teleconsultations); Eurostat Database.

StatLink https://stat.link/nguwhs

Figure 8.4. Teleconsultations with doctors during the first year of the pandemic



Note: EU average is weighted. 1. Low reliability for 2021 data from Cyprus, Latvia, Luxembourg (and 2020 data) and Malta because of low sample size.
Source: Eurofound (2022), Living, working and COVID-19 e-survey.

StatLink https://stat.link/xcvgd6

Public health laboratory capacity

A resilient health system is able to generate a robust increase in essential services. When a pandemic, epidemic or other infectious disease occurs, identifying, containing and controlling it requires the scale up of laboratory services. This was evident during the COVID-19 pandemic, with diagnostic testing and genomic sequencing services under stress at the beginning of the pandemic. Genomic surveillance of SARS-CoV-2 (the virus that causes COVID-19) allows detection, monitoring and assessment of new virus variants (ECDC, 2021[1]). When it replicates, SARS-CoV-2 can manifest changes in its genome. Scaled up capacity is especially important when mutations are associated with changes in transmissibility or the effectiveness of countermeasures such as vaccines. The cost of sequencing has fallen over time but still requires substantial investment in staff, equipment and bioinformatics infrastructure.

A review of capacity for SARS-CoV-2 in EU countries identified most did not have the capacity to sequence the 5-10% of positive specimens suggested by the EC in January 2021 (ECDC, 2021[2]). Nineteen (of 27 EU/EEA countries) were sequencing less than 1% of positive specimens at the beginning of 2021. During 2021, there was a rapid expansion in sequencing: 1.8 million SARS-CoV-2 samples were sequenced in the 27 EU countries, Norway and Iceland. This was a 15-fold increase over 2020 and the percentage of positive tests sequenced increased from less than 1% in 2020 to an average of 7% across countries (4.3% weighted) in 2021 (Figure 8.5). There was, however, wide variation between countries. Six EU countries sequenced 10% or more of new cases and two EU countries sequenced less than 1%.

Sequencing an appropriate proportion of new cases over time also matters. The ECDC issued guidance for representative SARS-CoV-2 monitoring using genomic surveillance (ECDC, 2021[1]). Three countries met this guidance over 2021 for all weeks (Denmark, the Netherlands and Spain), while eight countries met this guidance for less than 10 weeks over 2021 (Figure 8.6). More countries were able to meet the thresholds in the later months of 2021 than earlier, demonstrating an increase in sequencing capacity.

Despite a rapid expansion in sequencing capacity in 2021, further improvements are crucial to ensure better and more timely evidence for decision-making in health systems and beyond. The ability to rapidly undertake sequencing and share the results is important to effective global responses.

Definition and comparability

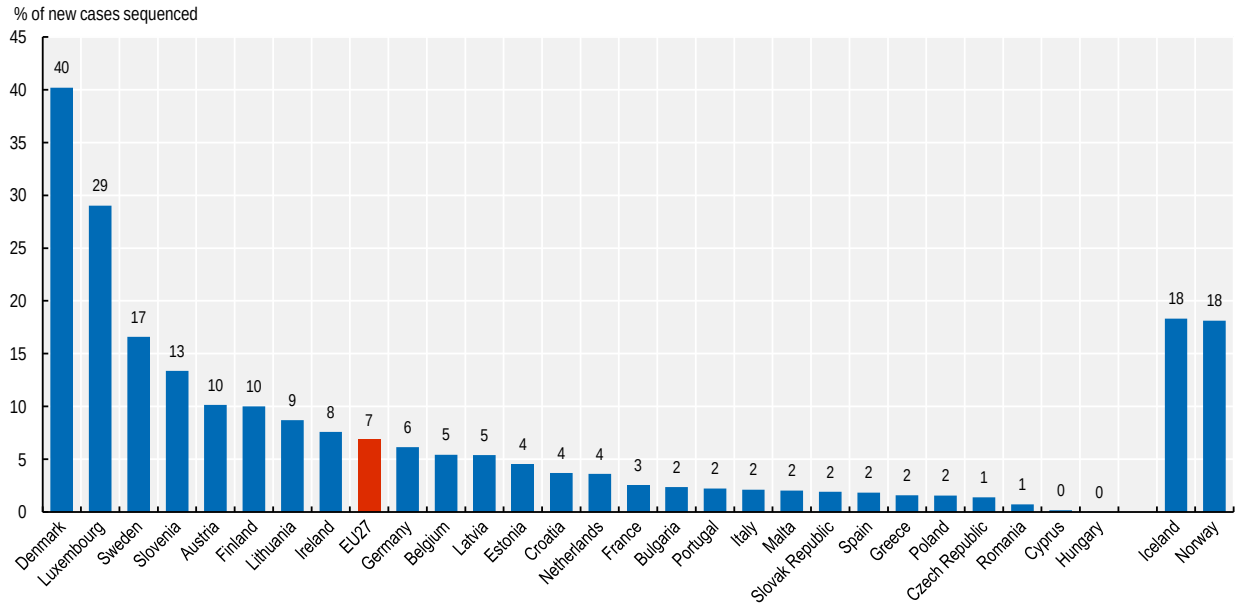
The results presented for this indicator come from the ECDC COVID-19 sequencing data (https://www.ecdc.europa.eu/en/publications-data/data-virus-variants-covid-19-eueea). Positive cases and the subsequent sequencing are impacted by local testing strategies, laboratory capacity and the effectiveness of surveillance systems. Testing varied between countries, which impacts comparability. The portion of cases sequenced in 2021 is calculated as the aggregate of the weekly number of sequences conducted, divided by the aggregate of the weekly number of new cases. Timing of sequencing relative to testing may introduce a bias. Longer periods (for example, monthly rather than weekly) for the representative sampling alter the results. The number of weeks where the ECDC monitoring threshold was exceeded is based on the guidance for representative and targeted genomic SARS-CoV-2 monitoring released in May 2021. The threshold used was the recommended sample size needed to estimate a 2.5% minimum prevalence of a variant (ECDC, 2021[2]). No new cases or when 90% of the new cases were sequenced was counted as meeting the threshold.

References

ECDC (2021), *Detection and characterisation capability and capacity for SARS-CoV-2 variants within the EU/EEA*, https://www.ecdc.europa.eu/en/publications-data/detection-and-characterisation-capability-and-capacity-sars-cov-2-variants. [2]

ECDC (2021), *Guidance for representative and targeted genomic SARS-CoV-2 monitoring*, https://www.ecdc.europa.eu/en/publications-data/guidance-representative-and-targeted-genomic-sars-cov-2-monitoring. [1]

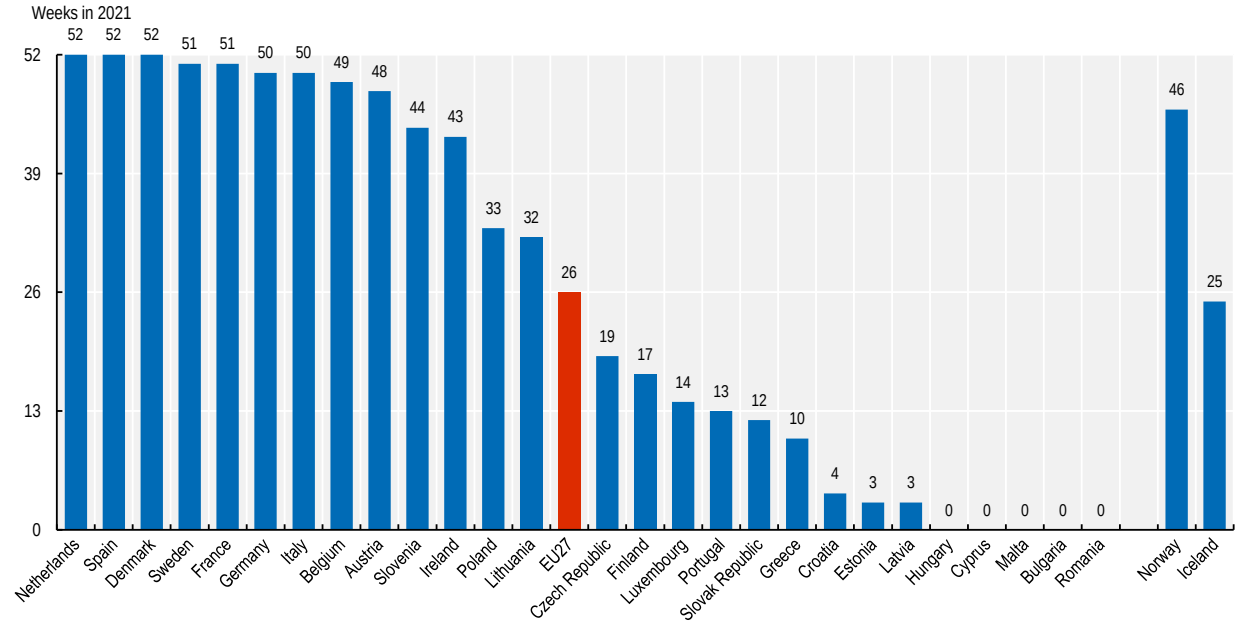
Figure 8.5. Percentage of new cases of COVID-19 sequenced, 2021



Note: The EU average is unweighted.
Source: ECDC (2022).

StatLink https://stat.link/w3rv5e

Figure 8.6. Number of weeks where ECDC threshold for representative genomic SARS-CoV-2 monitoring was exceeded, 2021



Note: The maximum number of weeks was 52. The EU average is unweighted.
Source: ECDC (2022).

StatLink https://stat.link/3cs1ve

Essential equipment: Intensive care beds

The pandemic placed enormous strain on intensive and critical care resources. It was more intense in some regions and periods than others, for example in Lombardy (Italy) during March/April 2020. The pandemic resulted in intensive care demands exceeding the ability of critical care facilities to serve their communities. If critical care is not accessible when required, morbidity and mortality increase. Increasing occupancy of intensive care has been associated with increasing mortality (Bravata et al., 2021[1]).

In 2019, there was a wide variation between countries in the number of intensive care unit (ICU) beds, with an eight-fold difference between the Czech Republic (43 adult beds per 100 000 population) and Sweden (5.1 adult beds) (Figure 8.7). There was also wide variation in the spare capacity of ICU beds. Occupancy was high in Ireland (90%) and substantially lower in Spain (57%).

The treatment of patients admitted for COVID-19 early in the pandemic involved a high rate of invasive ventilation and critical care. Those admitted with COVID-19 pneumonia and organ failure had a relatively long period in ICU, implying a very high demand for critical care and invasive ventilation capacity. Prior to widespread COVID-19 immunisation, the requirement for ICU beds during periods of acute infection (i.e. waves) typically doubled every two to three days and required four weeks to reach its peak.

In response, many countries increased critical care capacity. The use of temporary facilities, including surge capacity in intensive care delivery, was widespread. Many countries increased the intensity of treatment they could offer, with a greater number of ventilators. Improved use of digital technology led to greater co-ordination and a better use of critical care resources. However, capacity constraints in physical supplies and workforce hampered the initial response (OECD, forthcoming[2]).

Most countries reported an increase in adult ICU beds per capita (13 out of 15 EU countries) and for some there was a substantial increase in their maximum capacity. Sweden reported a maximum capacity during 2020 of 10.3 beds per 100 000, more than doubling the number available. Due to increased capacity and a decrease in other activity, there was a decrease in average occupancy of adult ICU beds in 2020 compared to 2019 in all reporting EU countries (Figure 8.8). Switzerland was the only country to report a slight increase.

Resilient health systems have the flexibility to increase critical care capacity quickly to match demand. While physical capacity is important, it is essential that trained staff and adequate supplies are also present.

Definition and comparability

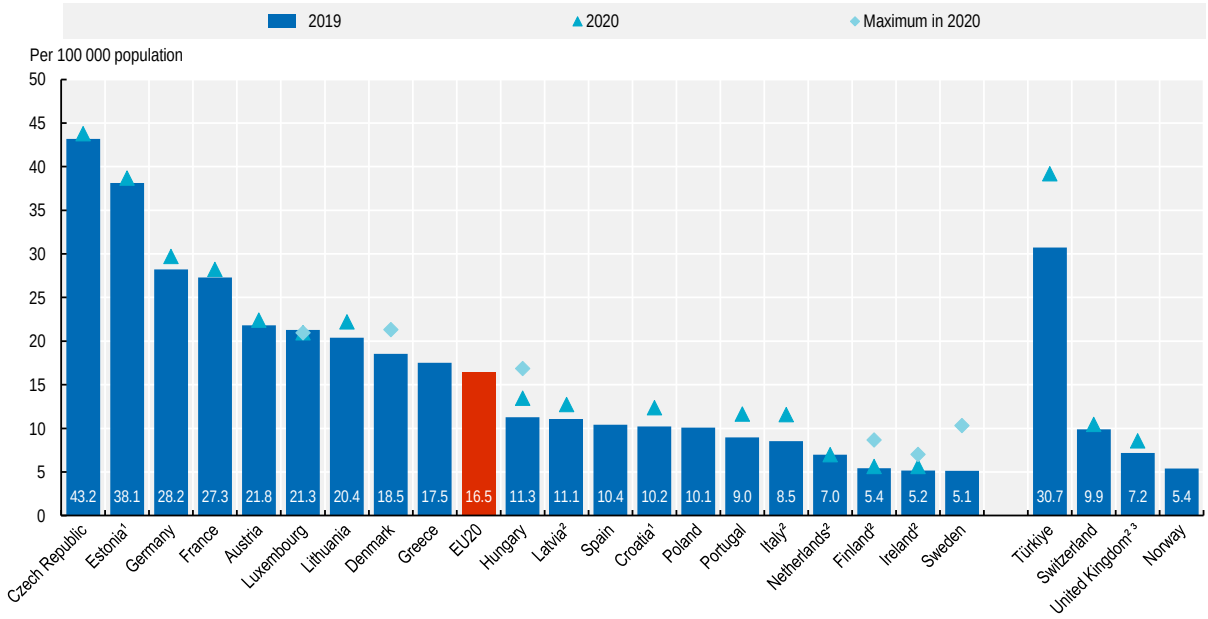
Data are sourced from OECD/Eurostat/WHO-Europe Joint Questionnaire on Non-Monetary Health Care Statistics. ICU beds are for critically-ill patients who need intensive and specialised care to sustain life during a period of acute organ system insufficiency. ICU beds are classified by the level of care provided to the patient. Commonly, this classification has three levels, with Level 3 providing the most intense care and Level 1 the lowest. The data on ICU beds cover these three levels, except in Finland, Ireland, Italy, Latvia, the Netherlands and the United Kingdom, which include only critical care beds (Levels 2 and 3). The exact definition of ICU beds varies between countries. The data for ICU beds for most countries relate to adult ICU beds, but a few countries (such as Croatia and Estonia) also include neonatal and paediatric ICU beds.

References

Bravata, D. et al. (2021), "Association of Intensive Care Unit Patient Load and Demand With Mortality Rates in US Department of Veterans Affairs Hospitals During the COVID-19 Pandemic", *JAMA Network Open*, Vol. 4/1, pp. e2034266-e2034266, https://doi.org/10.1001/JAMANETWORKOPEN.2020.34266. [1]

OECD (forthcoming), *Ready for the Next Crisis? Investing in Resilient Health Systems*, OECD Health Policy Studies, OECD Publishing, Paris. [2]

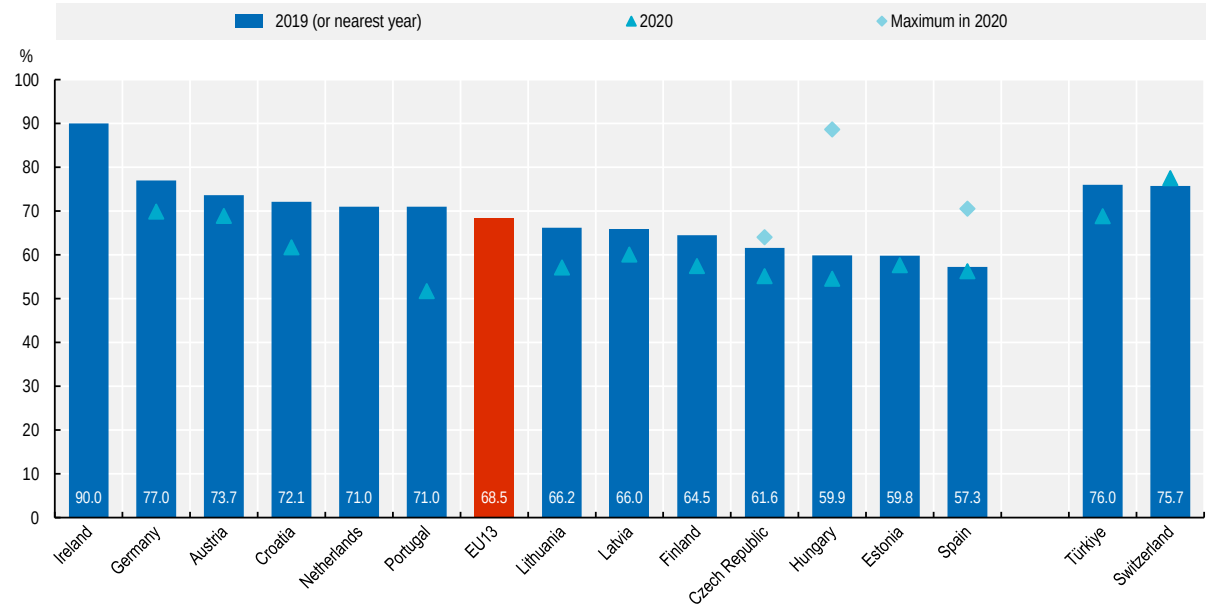
Figure 8.7. Adult intensive care beds, 2019 and 2020



Note: The EU average is unweighted. 1. Data include neonatal and paediatric ICU beds. 2. Data cover critical care beds only. 3. Data refer to England.
Source: OECD/Eurostat/WHO-Europe Joint Questionnaire on Non-Monetary Health Care Statistics. Data for Denmark, Norway, Poland, Sweden and the United Kingdom (England) come from additional data collections, also based on national sources.

StatLink https://stat.link/07il69

Figure 8.8. Adult ICU occupancy rate, 2019 and 2020



Source: OECD/Eurostat/WHO-Europe Joint Questionnaire on Non-Monetary Health Care Statistics, based on national sources.

StatLink https://stat.link/q4p0tj

Adoption of Electronic Medical Records

Health care that is safe, effective, timely, efficient and patient-centred relies on the right information reaching the right person (or organisation) at the right time. A digitalised information infrastructure that ensures timely and reliable sharing of clinical and other information can improve health outcomes and efficiency, and can create valuable data for researchers and system managers (OECD, 2017[1]). The pandemic demonstrated the importance of contemporary information in Electronic Medical Records (EMR), guiding decision-making during a crisis and targeting resources to those who benefit the most.

Many countries are implementing EMRs across multiple health care settings. In 2021, the proportion of primary care physician practices using an EMR was 96% on average across 14 countries (Oderkirk et al., forthcoming[2]) (Figure 8.9). There was less variation between countries in 2021 than in previous surveys, with all countries reporting that 80% or more of primary care physician practices used an EMR.

Almost all (13 of 14) reporting EU countries could share information between physician practices and hospitals about a patient's current medications. In 2021, an average of 97% of physician's practices in reporting countries shared this information (Figure 8.10).

Almost all reporting EU countries (12 of 14), Iceland, Norway and Türkiye, defined a minimal dataset or summary record to be shared amongst health care providers treating the same patient. The average proportion of all patients with an EMR containing the minimum dataset was 77%, ranging from 5% in Italy to 100% in five countries (Denmark, Estonia, Finland, Luxembourg and Sweden).

Information from EMRs was used during the COVID-19 pandemic, underscoring the value of an integrated information system during times of crisis. Uses across Europe included integration between EMR and tracking and tracing systems (9 of 14 EU countries, Iceland and Türkiye), integration between EMR and COVID-19 certificates (11 of 14 EU countries, Iceland and Türkiye) and post-market surveillance of COVID-19 vaccines (8 of 14 EU countries, Iceland and Türkiye).

Most (10 of 14) EU countries changed or were planning to change their EMRs, due to their pandemic experience. Almost all (12 of 14) countries intend to use data from EMRs for regular national monitoring of health or health care. The ongoing development and integration of EMRs into the wider health ecosystem has the potential to improve the resilience of health systems.

Definition and comparability

An Electronic Medical Record is a computerised medical record created in an organisation that delivers care, such as a hospital or physician's practice, for patients of that organisation. Ideally, information in the EMR should be shared between providers and settings to provide a detailed history of contact with the health care system for individual patients from multiple organisations (Oderkirk, 2017[3]).

The figures presented on EMR implementation are sourced from a 2021 survey of OECD countries to which 14 EU countries responded, as well as Iceland, Norway, Switzerland and Türkiye (Oderkirk et al., forthcoming[2]). The same survey was carried out in 2016 with 15 EU countries, as well as Iceland, Norway, Switzerland and the United Kingdom responding. There were slight differences in the questions reflecting advancements in data management between surveys that may impact comparability between the results. Another limitation is that data are based on self-reporting by countries.

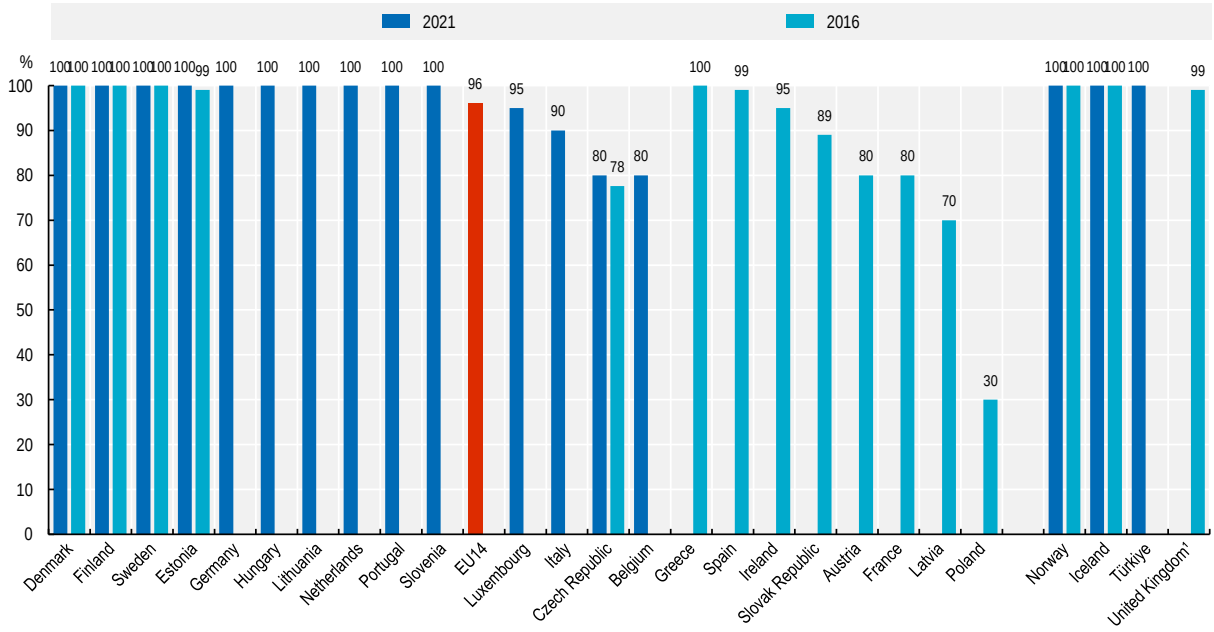
References

Oderkirk, J. (2017), "Readiness of electronic health record systems to contribute to national health information and research", *OECD Health Working Papers*, No. 99, OECD Publishing, Paris, https://doi.org/10.1787/9e296bf3-en. [3]

Oderkirk, J. et al. (forthcoming), "Stocktaking of country level advancements in implementing and utilising EHR systems", *OECD Health Working Papers*, OECD Publishing, Paris. [2]

OECD (2017), *New Health Technologies: Managing Access, Value and Sustainability*, OECD Publishing, Paris, https://doi.org/10.1787/9789264266438-en. [1]

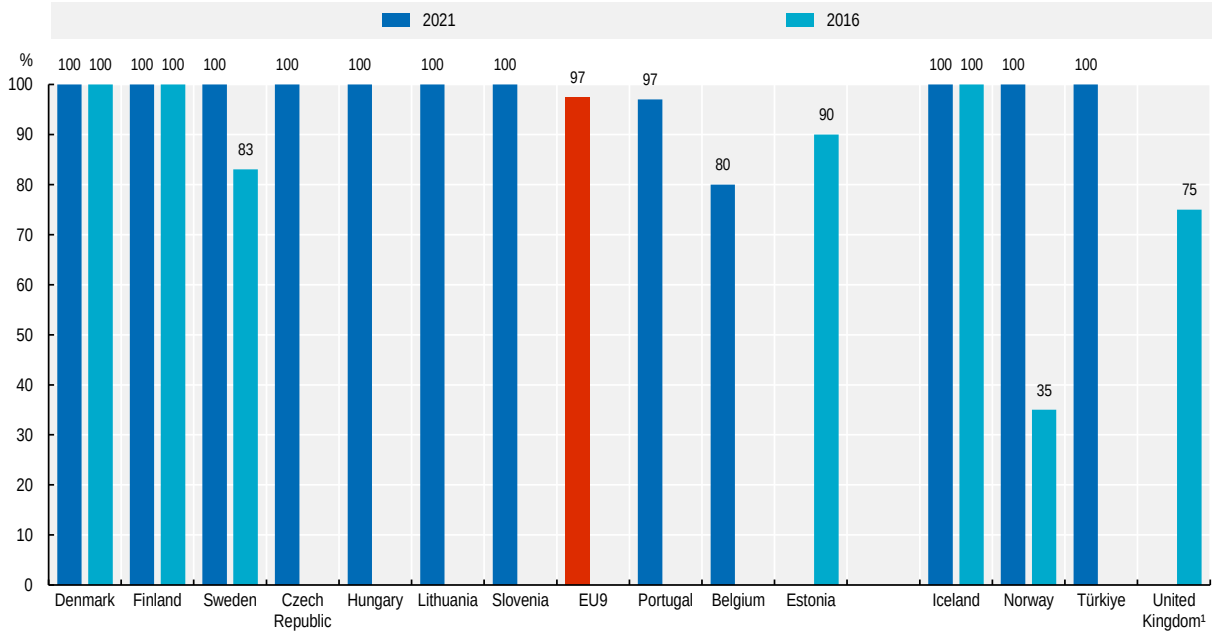
Figure 8.9. Percentage of primary care physician practices using Electronic Medical Records, 2021 and 2016



Note: The EU average is unweighted. 1. Data refer to England.
Source: OECD Survey of Electronic Health Record System Development and Use, 2021 and 2016.

StatLink https://stat.link/cemyjv

Figure 8.10. **Percentage of physician practices that can share information with hospitals about patients' current medications**



Note: The EU average is unweighted. 1. Data refer to England.
Source: OECD Survey of Electronic Health Record System Development and Use, 2021 and 2016.

StatLink https://stat.link/pibq12

Capital expenditure in the health sector

Investments in health care facilities, diagnostic and therapeutic equipment, and information and communications technology, affect the capacity to respond to population needs. There are no guidelines or international benchmarks regarding the optimal level of capital investment in the health sector. Nonetheless, it is of critical importance for countries to maintain spare capacity to deal with surges – too little investment will over-stretch service provision, undermining health system resilience.

In 2020, the EU allocated around 0.45% of its total GDP to capital spending in the health sector (Figure 8.11). This equated to 5% of health expenditure in 2020. However, as with current spending, there are differences in levels of investment between countries and variations over time.

As a proportion of GDP, Germany was the biggest spender on capital investment in the health sector in 2020, allocating 1.1% of its GDP. At the lower end, the Czech Republic, Luxembourg, Greece and Poland all invested less than 0.2% of their GDP on capital infrastructure and equipment across the health sector.

Capital investment in buildings, machinery and technology fluctuates, responding not only to acute needs but also to the economic climate. A lack of investment spending now can lead to accumulating problems and higher future costs, as equipment and facilities deteriorate.

After decreasing significantly in the wake of the 2008-09 economic crisis, capital spending in the health sector picked up across Europe between 2013 and 2015, before dropping back somewhat. Recent years have seen investment pick up again, on average, accelerating between 2019 and 2020, with the COVID-19 pandemic a likely driver of this trend in some countries (Figure 8.12).

While Germany maintained a steady yet elevated level of capital investment over the last eight years, other countries displayed a more volatile pattern of spending. Spain, and outside of the EU, the United Kingdom, showed a significant increase in investment over 2019-20. However, both countries reduced markedly their capital spending after the 2008-09 economic crisis, such that their respective 2020 spending was still below the levels reported in 2008. While capital spending in Italy and France may have rebounded to an extent after the economic crisis, since 2013 it has not increased further (and has fallen in France), such that pre-pandemic levels were below those of the previous 10-15 years.

The European Union supports capital investment in national health systems via the European Structural and Investment Funds. The key objectives of the Funds are to reduce health inequalities between regions and social groups, and to increase the effectiveness and accessibility of national health care systems (European Commission, 2020[1]). Following the pandemic, investment support by the EU Funds in health is expected to increase significantly as part of the EUR 800 billion “Next Generation EU” recovery package.

Definition and comparability

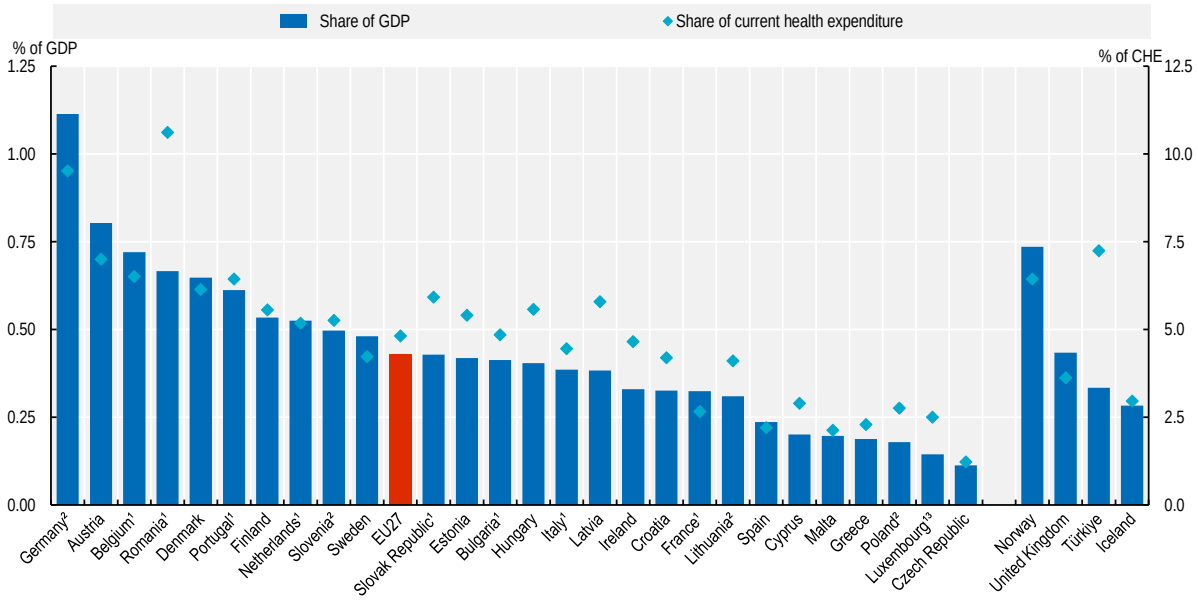
Capital expenditure (or gross fixed capital formation) in the health sector is measured by the total value of the fixed assets that health providers have acquired during the accounting period (less the value of the disposals of assets) and that are used for more than one year in the production of health services. The breakdown by assets includes infrastructure and equipment, as well as software and databases.

Gross fixed capital formation in health is reported by many countries under the System of Health Accounts (SHA). It is also included in National Accounts data where it is broken down by industrial sector according to the International Standard Industrial Classification Rev. 4. To estimate investment in health, section Q: Human health and social work activities or Division 86: Human health activities can be used. The former is normally broader than the SHA boundary while the latter is narrower.

References

European Commission (2020), *Health Investments by European Structural and Investment Funds: 2014-2020*, https://ec.europa.eu/health/sites/health/files/health_structural_funds/docs/esif_factsheet_en.pdf. [1]

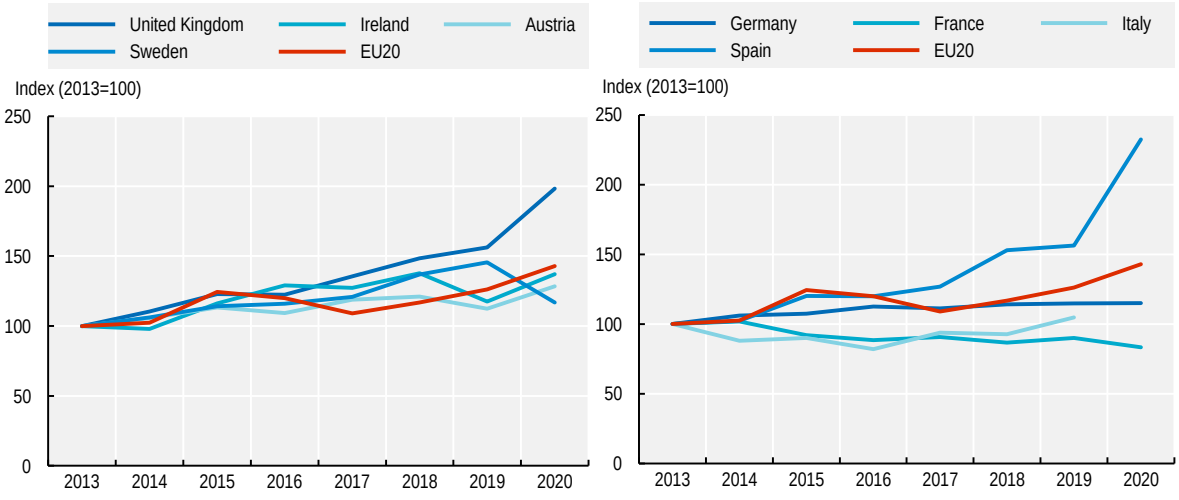
Figure 8.11. Capital expenditure on health as a share of GDP and in relation to current health expenditure, 2020 (or nearest year)



Note: The EU average is unweighted. 1. Refers to gross fixed capital formation in ISIC 86: Human health activities (ISIC Rev. 4). 2. Refers to gross fixed capital formation in ISIC Q: Human health and social work activities (ISIC Rev. 4). 3. A significant proportion of GDP in Luxembourg consists of profits from foreign-owned companies that are repatriated. Thus, it is not a true measure of the productive capacity of the domestic economy.
Source: OECD Health Statistics 2022; OECD National Accounts; Eurostat Database.

StatLink https://stat.link/da3k1t

Figure 8.12. Changes in capital expenditure, in real terms, selected countries, 2013-20



Note: The EU average is unweighted. The value in 2013 is set as 100.
Source: OECD Health Statistics 2022; OECD National Accounts; Eurostat Database.

StatLink https://stat.link/od5jg8

Public expenditure projections for health and long-term care

Over 80% of health spending in the EU is financed out of public sources, such that the size and growth in health and long-term care expenditure raises questions about a country's ongoing budgetary position, as noted in Chapter 5 (see indicator "Financing of health expenditure"). Ageing populations will continue to exert pressures on health and long-term care spending while reducing the size of the working-age population able to finance such expenditure, raising concerns around the fiscal sustainability of health and long-term care systems. Another important driver of health and long-term care spending is technological progress. The type of technological development and how it is implemented may put upward or downward pressures on expenditure.

Long-term budgetary projections are useful in that they allow policy makers to consider the trajectory of public expenditure under various scenarios. They also reveal the role of the main underlying drivers underpinning the development of health and long-term care costs.

Projections of public expenditure on both health and long-term care are regularly carried out by the Ageing Working Group of the Economic Policy Committee (AWG), using the European Commission services' models (European Commission (DG ECFIN), 2021[13]). In both health and long-term care projection models, the range of scenarios test the potential impact of different determinants of public spending (including both demographic and non-demographic factors) to project how each may contribute to the evolution of public spending over the next 50 years.

The results presented here are based on the 2021 AWG reference (or baseline) scenario, which is used when calculating the overall budgetary impact of population ageing. Among the main assumptions is that half of the future gains in life expectancy are spent in good health and an income elasticity of health care spending is converging linearly from 1.1 in 2019 to unity in 2070.

Based on this scenario, the 2021 projections exercise results in an increase of public spending on health of almost 1 percentage point (0.9) of GDP in total for the 27 EU countries by 2070 (Figure 8.13). At the lower end of the projections, public expenditure on health is forecast to rise by only 0.2 of GDP in Bulgaria and 0.3 in Cyprus, while it is projected to increase by more than 2 ½ percentage points of GDP in the Slovak Republic, Poland and Malta.

Long-term care expenditure represents a steadily increasing share of GDP in many EU countries and, as such, it is important to the long-term sustainability of public finances. Under the same AWG reference scenario, the main result is a projected increase in public spending on long-term care across the 27 EU countries of more than 1 percentage point, from 1.7% of GDP in 2019 to 2.8% of GDP in 2070 (Figure 8.14). The results vary widely across countries, from basically no change in Greece, a 0.2 percentage point rise in Latvia and Bulgaria, more than 2 percentage points of GDP in the Slovak Republic, Finland, Belgium and Sweden, and as much as 2.7 and 3.4 percentage point increases in the Netherlands and Denmark respectively (European Commission (DG ECFIN), 2021[1]).

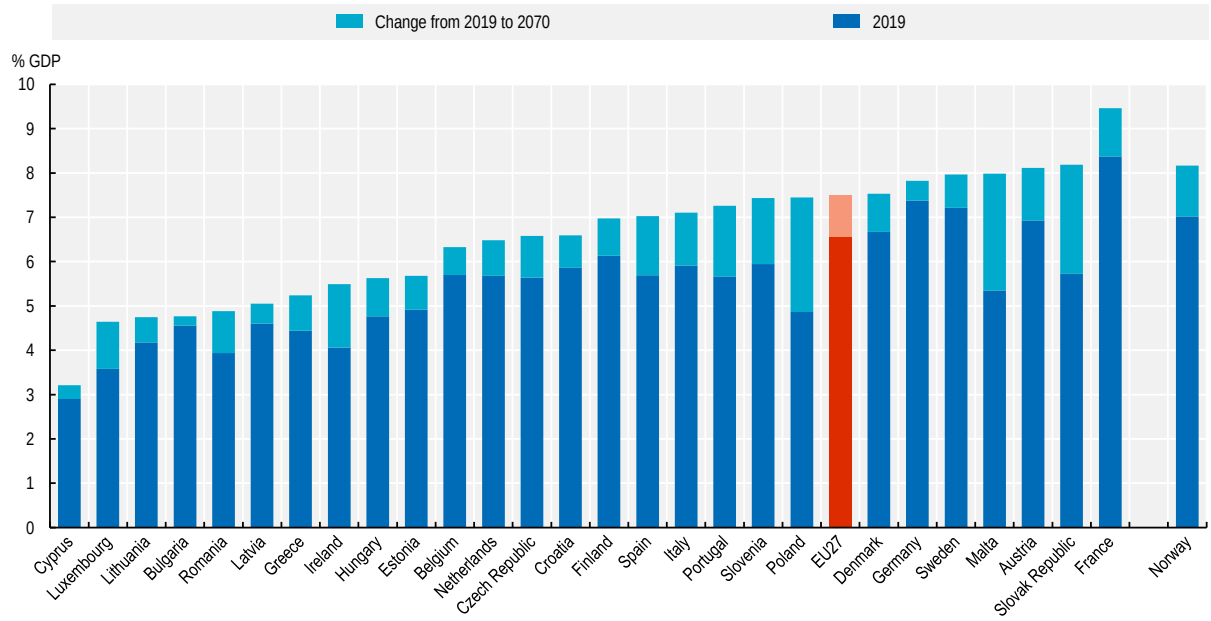
Definition and comparability

The data, methodology and assumptions used for the health and long-term care expenditure projections are explained in detail in the 2021 report prepared by the European Commission (DG ECFIN) and the Economic Policy Committee (Ageing Working Group). The "AWG reference scenario" is used as the baseline scenario when calculating the overall budgetary impact of ageing. The EU averages are weighted according to GDP.

References

European Commission (DG ECFIN) (2021), *The 2021 Ageing Report: Economic and Budgetary Projections for the EU Member States (2019-2070)*, European Commission, http://data.europa.eu/doi/10.2765/84455. [1]

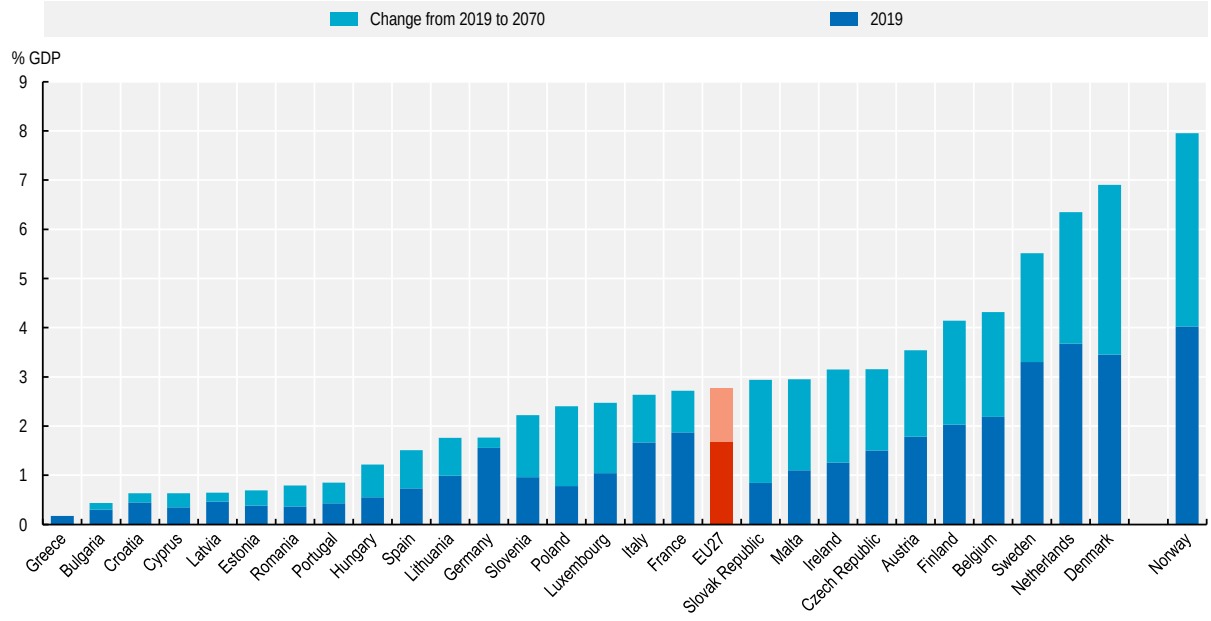
Figure 8.13. Public spending on health care as a percentage of GDP, 2019-70 – Ageing Working Group reference scenario



Note: The EU total is weighted by GDP.
Source: EC and EPC (2021).

StatLink https://stat.link/l7b2om

Figure 8.14. Public spending on long-term care as a percentage of GDP, 2019-70 – Ageing Working Group reference scenario



Note: The EU total is weighted by GDP.
Source: EC and EPC (2021).

StatLink https://stat.link/9tp38z

Annex A. Statistical annex

Table A A.1. Total population, mid-year, thousands, 1960 to 2021

	1960	1970	1980	1990	2000	2010	2015	2020	2021
Austria	7 048	7 467	7 549	7 678	8 012	8 363	8 643	8 917	8 956
Belgium	9 153	9 656	9 859	9 967	10 251	10 896	11 274	11 539	11 593
Bulgaria	7 867	8 490	8 862	8 718	8 170	7 396	7 178	6 934	6 878
Croatia	4 140	4 412	4 600	4 777	4 468	4 296	4 208	4 047	3 958
Cyprus	573	614	509	580	694	829	848	892	900
Czech Republic	9 602	9 858	10 304	10 333	10 255	10 474	10 546	10 698	10 506
Denmark	4 580	4 929	5 123	5 141	5 340	5 548	5 683	5 831	5 857
Estonia	1 212	1 360	1 477	1 569	1 397	1 331	1 315	1 330	1 331
Finland	4 430	4 606	4 780	4 986	5 176	5 363	5 480	5 530	5 541
France	45 684	50 772	53 880	58 171	60 762	64 819	66 548	67 571	67 750
Germany[1]	55 608	61 098	61 549	63 202	82 212	81 777	81 687	83 161	83 196
Greece	8 332	8 793	9 643	10 197	10 806	11 121	10 821	10 699	10 641
Hungary	9 984	10 338	10 711	10 374	10 211	10 000	9 843	9 750	9 710
Ireland	2 829	2 957	3 413	3 514	3 805	4 560	4 702	4 985	5 033
Italy	50 200	53 822	56 434	56 719	56 942	59 277	60 731	59 439	59 110
Latvia	2 121	2 359	2 512	2 663	2 368	2 098	1 978	1 900	1 884
Lithuania	2 779	3 140	3 413	3 698	3 500	3 097	2 905	2 795	2 801
Luxembourg	314	339	364	382	436	507	570	630	640
Malta	327	303	317	354	390	415	445	515	519
Netherlands	11 487	13 039	14 150	14 952	15 926	16 615	16 940	17 442	17 533
Poland	29 637	32 664	35 574	38 111	38 259	38 043	37 986	37 899	37 747
Portugal	8 858	8 680	9 766	9 983	10 290	10 573	10 358	10 297	10 325
Romania	18 407	20 250	22 207	23 202	22 443	20 247	19 816	19 265	19 120
Slovak Republic	4 068	4 538	4 980	5 299	5 389	5 391	5 424	5 459	5 447
Slovenia	1 585	1 725	1 901	1 998	1 989	2 049	2 064	2 102	2 108
Spain	30 455	33 814	37 491	38 867	40 568	46 577	46 445	47 366	47 416
Sweden	7 485	8 043	8 311	8 559	8 872	9 378	9 799	10 353	10 416
EU27 (total)	355 968	385 138	406 418	418 764	428 929	441 041	444 235	447 346	446 915
Albania	1 609	2 135	2 672	3 267	3 060	2 913	2 881	2 838	2 812
Iceland	176	204	228	255	281	318	331	366	373
Moldova	..	..	..	..	3 640	3 562	2 835	2 619	..
Montenegro	..	..	..	..	605	619	622	621	619
North Macedonia	1 392	1 629	1 891	1 882	2 026	2 055	2 070	2 073	1 953
Norway	3 581	3 876	4 086	4 241	4 491	4 889	5 189	5 379	5 408
Serbia	..	..	..	..	7 516	7 291	7 095	6 899	6 834
Switzerland	5 328	6 181	6 319	6 716	7 184	7 825	8 282	8 638	8 703
Türkiye	27 438	35 294	44 522	56 104	65 809	73 142	78 218	83 385	84 147
Ukraine	..	..	..	..	48 889	45 690	42 675	41 576	41 208
United Kingdom	52 400	55 663	56 314	57 248	58 893	62 766	65 116	67 081	67 351

Note: Data for 2021 are provisional and subject to revisions.
1. Population figures for Germany prior to 1991 refer to West Germany.
Source: Eurostat Database (data extracted in September 2022).

StatLink https://stat.link/aoxh7l

Table A A.2. Share of the population aged 65 and over, 1 January 1960 to 2021

	1960	1970	1980	1990	2000	2010	2015	2020	2021
Austria	12.1	14.0	15.5	14.9	15.4	17.6	18.5	19.0	19.2
Belgium	12.0	13.3	14.3	14.8	16.8	17.2	18.1	19.1	19.3
Bulgaria	7.4	9.4	11.8	13.0	16.2	18.2	20.0	21.6	21.7
Croatia	..	..	..	..	..	17.8	18.8	21.0	21.4
Cyprus	..	..	..	10.8	11.2	12.5	14.6	16.3	16.4
Czech Republic	9.5	11.9	13.6	12.5	13.8	15.3	17.8	19.9	20.2
Denmark	10.5	12.2	14.3	15.6	14.8	16.3	18.6	19.9	20.1
Estonia	10.5	11.7	12.5	11.6	14.9	17.4	18.8	20.0	20.3
Finland	7.2	9.0	11.9	13.3	14.8	17.0	19.9	22.3	22.7
France	11.6	12.8	14.0	13.9	15.8	16.6	18.4	20.4	20.7
Germany[1]	10.8	13.0	15.6	15.3	16.2	20.7	21.0	21.8	22.0
Greece	9.4	11.1	13.1	13.7	17.3	19.0	20.9	22.3	22.5
Hungary	8.9	11.5	13.5	13.2	15.0	16.6	17.9	19.9	20.3
Ireland	11.1	11.1	10.7	11.4	11.2	11.2	12.9	14.4	14.8
Italy	9.3	10.8	13.1	14.7	18.1	20.4	21.7	23.2	23.5
Latvia	..	11.9	13.0	11.8	14.8	18.1	19.4	20.5	20.8
Lithuania	..	10.0	11.3	10.8	13.7	17.3	18.7	19.9	19.9
Luxembourg	10.8	12.5	13.7	13.4	14.3	14.0	14.2	14.5	14.6
Malta	..	..	8.4	10.4	11.8	14.9	18.2	18.5	18.9
Netherlands	8.9	10.1	11.5	12.8	13.6	15.3	17.8	19.5	19.8
Poland	5.8	8.2	10.2	10.0	12.1	13.6	15.4	18.2	18.7
Portugal	7.8	9.2	11.2	13.2	16.0	18.3	20.3	22.1	22.4
Romania	..	8.5	10.3	10.3	13.2	16.1	17.0	18.9	19.3
Slovak Republic	6.8	9.1	10.6	10.3	11.4	12.4	14.0	16.6	17.1
Slovenia	..	..	..	10.6	13.9	16.5	17.9	20.2	20.7
Spain	8.2	9.5	11.1	13.4	16.5	16.8	18.5	19.6	19.8
Sweden	11.7	13.6	16.2	17.8	17.3	18.1	19.6	20.0	20.1
EU27 (total)	..	..	..	13.7	15.6	17.4	18.8	..	..
Albania	..	..	..	..	..	10.7	12.4	14.8	15.2
Iceland	8.0	8.8	9.8	10.6	11.6	12.0	13.5	14.4	14.7
Moldova	..	..	..	..	..	10.1	10.3	..	14.9
Montenegro	..	..	..	..	12.2	12.9	13.7	15.6	15.9
North Macedonia	..	..	..	..	9.8	11.6	12.7	14.5	14.8
Norway	10.9	12.8	14.7	16.3	15.3	14.9	16.1	17.5	17.9
Serbia	..	..	..	..	16.0	17.0	18.5	21.0	21.3
Switzerland	10.2	11.2	13.8	14.6	15.3	16.8	17.8	18.7	18.8
Türkiye	3.5	4.4	4.7	4.3	5.4	7.0	8.0	9.1	9.5
Ukraine	..	..	..	..	..	15.7	15.6	17.1	17.4
United Kingdom	11.7	12.8	15.0	15.7	15.8	16.4	17.8	18.6	18.8

Note: Data for 2021 are provisional and subject to revisions.
1. Population figures for Germany prior to 1991 refer to West Germany.
Source: Eurostat Database (data extracted in September 2022).

StatLink https://stat.link/1nm2be

Table A A.3. Total fertility rate, number of children per women aged 15-49, 1960 to 2020, or nearest year

	1960	1970	1980	1990	2000	2010	2015	2020
Austria	2.69	2.29	1.65	1.46	1.36	1.44	1.49	1.44
Belgium	2.54	2.25	1.68	1.62	1.67	1.86	1.70	1.55
Bulgaria	2.31	2.17	2.05	1.82	1.26	1.57	1.53	1.56
Croatia	..	..	..	..	..	1.55	1.40	1.48
Cyprus	..	..	..	2.41	1.64	1.44	1.32	1.36
Czech Republic	2.09	1.92	2.08	1.90	1.15	1.51	1.57	1.71
Denmark	2.57	1.95	1.55	1.67	1.77	1.87	1.71	1.68
Estonia	1.98	2.17	2.02	2.05	1.36	1.72	1.58	1.58
Finland	2.72	1.83	1.63	1.78	1.73	1.87	1.65	1.37
France	2.73	2.47	1.95	1.78	1.89	2.03	1.96	1.83
Germany	..	..	..	..	1.38	1.39	1.50	1.53
Greece	2.23	2.40	2.23	1.39	1.25	1.48	1.33	1.39
Hungary	2.02	1.98	1.91	1.87	1.32	1.25	1.45	1.59
Ireland	3.78	3.85	3.21	2.11	1.89	2.05	1.85	1.63
Italy	2.40	2.38	1.64	1.33	1.26	1.46	1.35	1.24
Latvia	..	..	..	..	1.25	1.36	1.70	1.55
Lithuania	..	2.40	1.99	2.03	1.39	1.50	1.70	1.48
Luxembourg	2.29	1.97	1.50	1.60	1.76	1.63	1.47	1.36
Malta	..	..	1.99	2.02	1.68	1.36	1.37	1.13
Netherlands	3.12	2.57	1.60	1.62	1.72	1.79	1.66	1.54
Poland	..	..	..	2.06	1.37	1.41	1.32	1.39
Portugal	3.16	3.01	2.25	1.56	1.55	1.39	1.31	1.41
Romania	..	..	2.43	1.83	1.31	1.59	1.62	1.80
Slovak Republic	3.04	2.41	2.32	2.09	1.30	1.43	1.40	1.59
Slovenia	..	..	..	1.46	1.26	1.57	1.57	1.59
Spain	..	..	2.22	1.36	1.22	1.37	1.33	1.19
Sweden	..	1.92	1.68	2.13	1.54	1.98	1.85	1.67
EU27 (total)	..	..	..	..	1.43	1.57	1.54	1.50
Albania	..	..	..	..	..	1.63	1.59	1.34
Iceland	..	2.81	2.48	2.30	2.08	2.20	1.80	1.72
Moldova	..	..	..	..	..	1.30	..	..
Montenegro	..	..	..	..	..	1.70	1.74	1.75
North Macedonia	..	..	..	..	1.88	1.56	1.50	1.31
Norway	..	2.50	1.72	1.93	1.85	1.95	1.72	1.48
Serbia	..	..	..	..	1.48	1.40	1.46	1.48
Switzerland	2.44	2.10	1.55	1.58	1.50	1.52	1.54	1.46
Türkiye	..	..	..	..	..	2.04	2.14	..
Ukraine	..	..	..	..	..	1.43	1.36	..
United Kingdom	2.72	2.43	1.90	1.83	1.64	1.92	1.80	1.56

Source: Eurostat Database (data extracted in September 2022).

StatLink https://stat.link/4oaspg

Health at a Glance: Europe 2022

STATE OF HEALTH IN THE EU CYCLE

The 2022 edition of *Health at a Glance: Europe* examines the key challenges European countries must address to develop stronger, more resilient health systems following the acute phase of the COVID-19 pandemic. It includes a special focus on how the pandemic has affected young people's mental and physical health. The report emphasises the need for additional measures to prevent the COVID-19 pandemic from scarring a generation of young people. This edition of Health at a Glance: Europe also assesses the pandemic's disruption of a wide range of health services for non-COVID patients, as well as the policy responses European countries deployed to minimise the adverse consequences of these disruptions. It also addresses a number of important behavioural and environmental risk factors that have a major impact on people's health and mortality, highlighting the need to put a greater focus on the prevention of both communicable and non-communicable diseases.

Co-funded by
the European Union

PRINT ISBN 978-92-64-46211-3
PDF ISBN 978-92-64-67515-5

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